

Jay-Bee Companies Emily Potesta Regulatory Agent

November 1, 2023

UIC Permitting WV DEP Office of Oil & Gas 601 57th St SE Charleston, WV 25304

Re: UIC # 2D08510284001 - Pluto 1A Renewal and Water Sources Appendix D

To Whom It May Concern,

Enclosed with this letter is the Jay-Bee Oil & Gas, Inc Pluto 1A Permit Renewal and Exhibits, an As-Drilled Mylar, and a check for permit fee for \$500.00. I have also included information from the original permit and modification, as most exhibits and information have not changed.

Regarding Appendix D, contact was attempted to local PSD through mail and phone call with negative response back to our office. Furthermore, it was found during surveying that the water wells that were originally named in Jay-Bees initial permit are either no longer available for use or are located outside of the ¼ mile radius, therefore no longer requiring testing. We did include the sample results for stream water testing and injectate testing.

If you have any further concerns or questions, please don't hesitate to contact me by email at <u>epotesta@jaybeeoil.com</u>, or by phone at 304-933-3878 or 304-203-0665.

Sincerely,

Emily Potesta Regulatory Agent RECEIVED Office of Öil and Gas

CK # 68007 \$ 50600 11/1/2023

NOV 0 6 2023

WV Department of Environmental Protection

Jay-Bee Oil & Gas, Inc., 3570 Shields Hill Road, Cairo, WV 26337 ~ Phone 304-628-3111

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS



Underground Injection Control - Class 2 and 3 UIC Wells

Permit Application Package Instructions and Guidance

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WV Department of Environmental Protection

Procedural explanation to be used to supplement the permit application package.

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Section 15 – Site Security Plan:	NOV 0.6 2023
	WV Department of

WV Department of Environmental Protection Place Holder

UIC-1 Form Sections 1-5

CHECKLIST FOR FILING A UIC PERMIT APPLICATION

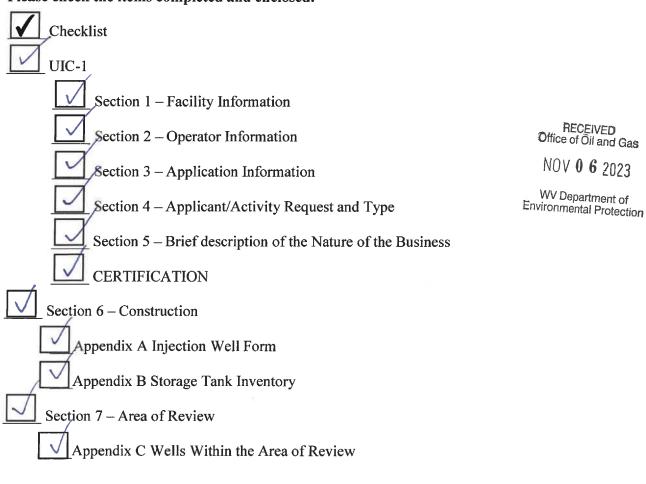
Please utilize this checklist to ensure you have prepared, completed, and enclosed all required documentation and payment to ensure a timely review of your submittal.

Operator	Jay-Bee Oil & Gas, Inc.				
Existing UIC Permit ID Number	2D08510284	UIC Well API Number	47-085-10284		

Please check the fees and payment included.

Fees	Payment	Туре	
UIC Permit Fee: \$500	\checkmark	Check	\checkmark
Groundwater Protection Plan		Electronic	
(GPP) Fee: \$50.00		Other	

Please check the items completed and enclosed.



Office of Oil and Gas Office Use Only					
Permit Reviewer					
Date Received					
Administratively Complete Date					
Approved Date					
Permit Issued	a.				

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(4/25)

Appendix D Public Service District Affidavit	
Appendix E Water Sources	
Appendix F Area Permit Wells	
Section 8 – Geological Data on Injection and Confining Zones	
Section 9 – Operating Requirements / Data	
Appendix G Wells Serviced by Injection Well	
Section 10 – Monitoring	
Section 11 – Groundwater Protection Plan (GPP)	
Appendix H Groundwater Protection Plan (GPP)	
Section 12 – Plugging and Abandonment	
Section 13 – Additional Bonding	
Section 14 – Financial Responsibility	
Appendix I Financial Responsibility	
Section 15 – Site Security Plan	
Appendix J Site Security for Commercial Wells	RECEIVED Office of Öil and Gas
Section 16 – Additional Information	NOV 0 6 2023
Appendix K Other Permit Approvals	WV Department of Environmental Protection

*NOTE: For all 2D wells an additional bond in the amount of \$5,000 is required.

Reviewed by (Print Name):	Emily Potesta
	G Q. LAL
Reviewed by (Sign):	- any form
Date Reviewed:	11/2/23



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UIC-1 (4/25)

	VIRGINIA DEPARTMENT OF ONMENTAL PROTECTION E OF OIL AND GAS 601 57 th Street, SE Charleston, WV 25304 (304) 926-0450 w.dep.wy.gov/oil-and-gas		ND INJECTION CONTROL (UIC) IT APPLICATION
	5100284 _{API #} 47-	-085-10284 v	vell # Pluto 1A
Section I. Facility Info	ormation		
Facility Name: Pluto 1A Inject	tion Well		
Address: 429 Simonton Rd.			
City: Ellenboro	State: WV Zip: 26346		
County: Ritchie	District: Clay 7.5' Quad: Ellenboro		
Location description: Location is approximate	ely 7,500' west x southwe	est, at the peak of a hi	II next to WV State Rt 50
Location of well(s) or approximation	ate center of field/project in UTN	NAD 83 (meters):	Latitude: 39.2615922
Northing: 4,345809.6	Easting: 4	492,939. 9	Longitude: -81.0818354
Environmental Contact Informa	tion:		RECEIVED Office of Oil and Gas
Name: Emily Potesta Phone: 304-203-0665		Regulatory Agent apotesta@jaybeeoil.com	NOV 0 6 2023
Destion 2 Operator la	formation		Environmental Protection
Section Z. Operator in			the second se
and the second sec			
Operator Name: Jay-Bee Oil &			
Operator Name: Jay-Bee Oil & Operator ID: 24610			
Section 2. Operator In Operator Name: Jay-Bee Oil & Operator ID: 24610 Address: 429 Simonton Rd. City: Ellenboro			

Contact Name: Emily Potesta Contact Phone: 304-203-0665 Contact Title: Regulatory Agent Contact Email: epotesta@jaybeeoil.com

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UIC-1 (4/25)

Section 3. Applicant Information

Ownership St	atus: 🔳 PRIVATE		🗍 FEDERAL	C STATE
SIC code:	1311 (2D, 2H, 2R)	🗌 1479 (3S)	OTHER (@	(explain):
Section	4. Applicant /	Activity R	equest and	d Type:
A. Apply	y for a new UIC Perm	nit: 🔲 2D	🗌 2H 🔲 2R	□ 3S

B. Reissue existing UIC Permit: 20 2H 2R 3S
C. Modify existing UIC Permit: 2D 2H 2R 3S
(Submit only documentation pertaining to the modification request)
2D COMMERCIAL FACILITY: YES NO

Section 5. Briefly describe the nature of business and the activities to be conducted:

Jay-Bee Oil & Gas, Inc. requests the renewal of permit for API # 47-085-10284 for a produced fluid injection well, to dispose of produced water from our local wells. This well is currently in operation. Since this is a private operation, we only inject fluids that are produced from wells that Jay-Bee owns and operates. We manage these operations in house, as well as monitoring and reporting. The facilities that house the fluids to be injected are approximately 2100' northeast of the injection well.

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Page 2 of 3

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APPLICATION CERTIFICATION

In accordance with WV Code 47CSR13.13.11, all UIC permit applications must be signed by one of the following:

- 1. For a corporation: by a principle corporate officer of at least the level of vice-president;
- 2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
- 3. For a municipality, State, Federal, or other public agency: by either a principle executive officer or ranking elected official;
- 4. Or a duly authorized representative in accordance with 47CSR13.13.11.b. (A person may be duly authorized by one of the primary entities (1-3) listed above by submitting a written authorization to the Chief of the WVDEP Office of Oil and Gas designating an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

Jay-Bee Oil & Gas, Inc.

(Company Name)

2D8510284

(UIC Permit Number)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (47CSR13.13.11.d)

Emily Potesta	Since of Oil and Gas
(Print Name)	NOV 0 6 2023
Regulatory Agent	WV Department of Environmental Protection
(Print Title)	
(Signature) 11/1/2023	
(Date)	

Place Holder

Section 6 - Construction

Injection Well Form

Pluto 1A

1) GEOLOGIC TARGET FORMATION Salina Formation
Depth 6846 Feet (top) 7476 Feet (bottom)
2) Estimated Depth of Completed Well, (or actual depth of existing well): 7877 Feet
3) Approximate water strata depths: Fresh 90 - 134 Feet Salt 964 Feet
4) Approximate coal seam depths: N/A
5) Is coal being mined in the area? Yes No
6) Virgin reservoir pressure in target formation <u>3000</u> psig Source Based on Newburg
7) Estimated reservoir fracture pressure Unknown psig (BHFP)
8) MAXIMUM PROPOSED INJECTION OPERATIONS:
Injection rate (bbl/hour) 85 bbl Avg
Injection volume (bbl/day) 650 bbl/day Avg
Injection pressure (psig) 4024
Bottom hole pressure (psig) 6897 est.
 DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES: Class 2 compliant fluids, acid sticks at 1 stick per 1000 bbls or as needed. See attached sample analysis.
Temperature of injected fluid: (°F) ambient
10) FILTERS (IF ANY) 60 micron filter system
11) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Insulated Hammer Union at top of well.



4708510284 APPENDIX A (cont.) Pluto 1A

12. Casing and Tubing Program

ТҮРЕ	Size	<u>New or</u> <u>Used</u>	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	<u>CEMENT:</u> <u>Fill-up (Cu.</u> <u>Ft.)</u>
Conductor	18 5/8"	New	H40	N/A	30	30"	Grout
Fresh Water	13 3/4"	New	J55	40#	310	310	310cf CTS
Coal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 1	8 5/8"	New	J55	24#	2064	2064	621cf CTS
Intermediate 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Production	5 1/2"	New	P110	20#	7718	7718	1558cf 770ft
Tubing	2 7/8"	New	L80	6.5#	6800	6800	None
Liners	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ТҮРЕ	<u>Wellbore</u>	Casing	Wall	Burst Pressure	Cement Type	Cement	Cement to
	<u>Diameter</u>	<u>Size</u>	Thickness			$\underline{\text{Yield (cu.}}$	Surface ?
						<u>ft./sk)</u>	<u>(Y or N)</u>
Conductor	20"	18 5/8"	.495	3000 lbs	Class A	N/A	Y
Fresh Water	17 1/2"	13 3/8"	.333	1500 lbs	Class A	1.20	Y
Coal	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 1	11"	8 5/8"	.264	2950 lbs	Class A	1.19	Y
Intermediate 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Production	7 7/8"	5 1/2"	.304	15000 lbs	Class A	1.17	Ν
Tubing		2 7/8"	.217	7260 lbs	N/A	N/A	N/A
Liners	N/A	N/A	N/A	N/A	N/A	N/A	N/A

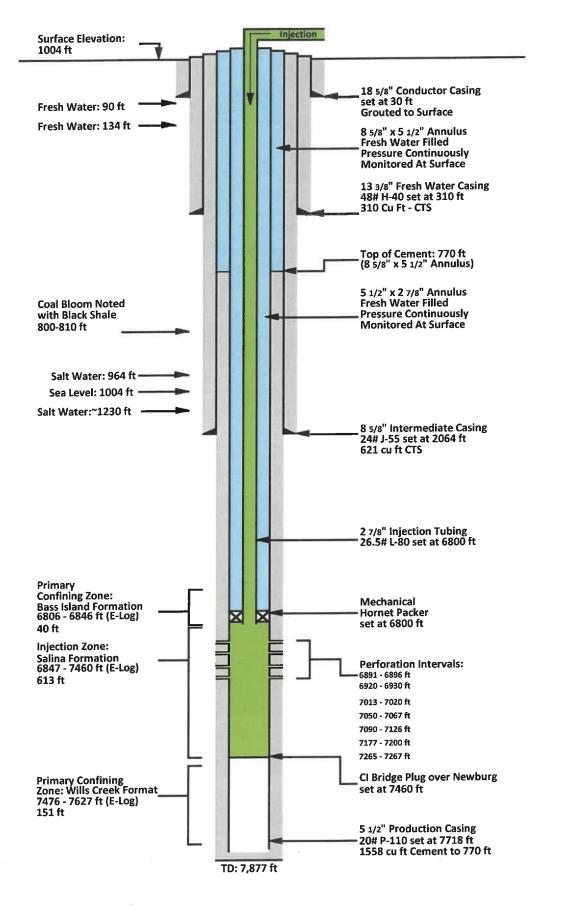
PACKERS	Packer #1	Packer #2	Packer #3	Packer #4
Kind:	Mechanical / Hornet			
Sizes:	5 1/2" x 2 7/8"			
Depths Set:	6800			

Cast Iron Bridge Plug over Newburg set at 7460





Pluto #1A API 47-085-10284 Jay Bee Oil & Gas, Inc. UIC 2D08510284001 (Well Drilled: July 18, 2020)



WR-35 Rev. 8/23/13				Page <u>1</u> of <u>4</u>
Departm	State of We ent of Environmental Pr	otection - Office of O	il and Gas	RECEIVED Office of Oil and Gas
	Well Operator's Re	port of Well Work		MAY 1 6 2024
				WV Department of Environmental Protection
API <u>47</u> 085 10284	County Ritchie	District	t Clay	
Quad Ellenboro 7.5"	Pad Name Pluto			
Farm name Jay Bee Yard LLC		Well N	Number Pluto	1A
Operator (as registered with the OOG)	4610			
Address 429 Simonton Road	City Ellenbord	Sta	ate WV	Zip 26346
Landing Point of Curve No	Attach an as-drilled plat, rthing 4345809.6 rthing n/a rthing n/a	profile view, and devia Easting 49 Easting n/a Easting n/a	2939.9	
Elevation (ft) 1,004' GL Permit Type Deviated Hori	Type of Well ■New	·		□Interim ■Final ■ Deep □ Shallow
Type of Operation Convert Dee	pen 📕 Drill 🗆 Plug	Back	□ Rework	□ Stimulate
Well Type Brine Disposal CBM	🗆 Gas 🗆 Oil 🗆 Secondar	y Recovery	Mining D Stor	rage 🗆 Other
Type of Completion ■ Single ■ Multip Drilled with □ Cable ■ Rotary	ele Fluids Produced r	Brine Gas DN	GL 🗆 Oil	D Other
Drilling Media Surface hole 📕 Air	□ Mud □Fresh Water	Intermediate hole	Air 🗆 Mud	□ Fresh Water □ Brine
	resh Water D Brine			
Mud Type(s) and Additive(s) Soap, Shale Inhibitor, Clay Stabiliz	zer, Water (misted)			
Date permit issued 5/31/19	Date drilling commence 8/6/20 Date		Date drilling c	410.04
Date completion activities began		te completion activities		n/a
Verbal plugging (Y/N) N Da	te permission granted	Gr	anted by	11/a
Please note: Operator is required to sub-		within 5 days of verbal j	permission to pl	ug
		n mine(s) (Y/N) depths		N
Salt water depth(s) ft		d(s) encountered (Y/N)	depths	N
Coal depth(s) ft800'-8	Cuv	ern(s) encountered (Y/N	I) depths	N
Is coal being mined in area (Y/N)	N			Reviewed by:

WR-35 Rev. 8/23/13 Well number Pluto 1A Farm name_Jay Bee Yard LLC API 47-**085** 10284 Basket Did cement circulate (Y/ N) CASING Hole Casing New or Grade STRINGS Size Size Depth Used wt/ft Depth(s) * Provide details below* Conductor 20" Grouted 18.625" 30' n/a n/a New Surface 48# H-40 42'-268' Yes 17.5" 13.375" 310' New Coal Intermediate 1 43'-2,022' Yes 11" 8.625" 2,064' New 24# J-55 Intermediate 2 Intermediate 3 Production 7.875" 5.5" 7,718' New 20# P-110 124,2154,6045,7040 Yes Tubing 2 7/8" 6,800' New 6.5# L-80 Packer Packer type and depth set Mechanical Hornet Packer set @ 6,800' Comment Details Surface CTS with 20% OH excess / Intermediate CTS with 30% OH excess / Production CTS with 5% OH excess

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume $(ft^{\frac{3}{2}})$	Cement Top (MD)	WOC (hrs)
Conductor	Class A	n/a	n/a	n/a	n/a	CTS	8 hours
Surface	Class A	257	15.6	1.2051	310	CTS	8 hours
Coal							
Intermediate 1	Class A	621	15.6	1.1924	621	CTS	8 hours
Intermediate 2							
Intermediate 3							
Production	Class A	1327	14.5	1.1740	1558	770'	8 hours
Tubing							
Drillers TD (ft) Deepest format Plug back proc	tion penetrated New	burg		gers TD (ft) 7.7 g back to (ft) $n/2$			
Kick off depth Check all wire		·		deviated/directi gamma ray		iction perature □soni	c
Well cored DESCRIBE TI Surface- Centralizing Bails	HE CENTRALIZE	Conventional R PLACEMENT	Sidewall USED FOR EA			ollected Ves	
	zers at 516,1032,1494 Centra	alizing Baskets at 43,2022					
Production- Bow Spri	ng Centralizer Every 500' TD	to Surface, Centralizing B	askets at 124,2154,6045	5,7040			
WAS WELL O	COMPLETED AS	SHOT HOLE	□Yes ∎ No	DETAILS		DE	CEIVED
WAS WELL (COMPLETED OPP	EN HOLE? 🗆 Y	Yes 📕 No	DETAILS _		Office of MAY	Oil and Gas
WERE TRAC	ERS USED 🗆 Ye	es 🛚 No T	YPE OF TRAC	ER(S) USED _		WV D	epartment of rental Protection

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WR-35 Rev. 8/23/13 Page <u>**3**</u> of <u>**4**</u>

API 47- 085 _ 10284

Farm name_Jay Bee Yard LLC

Well number Pluto 1A

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/6/20	7,634'	7,717	60	Newburg
2	12/15/20	7,460'	7,460'	0	Cast Iron Bridge Plug over Newburg
3	12/15/20	7,265'	6,891'	120	Salina
					See attached wellbore diagram
	-1				

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
110.	Duit	Inter (DITA)	Trebbare (T bi)		1011 (101)			
_								
							RECEN Office of Oi	VED
				4			Office of Of	and Gas

Please insert additional pages as applicable.

MAY 16 2024

WV Department of Environmental Protection

PI 47- 085	10284	Farm	name Jay Bee	Yard LL	С	Well nu	_{mber} F	Pluto 1	Α	
-										
RODUCING F	ORMATION(S	<u>)</u>	DEPTHS							
/a			n/a	TVD	n/a	MD				
lease insert add	ditional pages as	s applicable.								
SAS TEST	🗆 Build up 🗆	Drawdown	Open Flow		OIL TEST	Flow D F	oump			
HUT-IN PRES	SSURE Surfa	ace n/a	psi Botto	m Hole n/	a psi	DURATI	ON OF	TEST	n/a	hrs
DPEN FLOW	Gas n/a mcf	Oil pd <u>n/a</u>	NGL bpd <u>n/a</u>	_ bpd	Water n/a bpd	GAS ME 🗆 Estima	EASUF ited	ED BY	í ce ⊡	Pilot
ITHOLOGY/	TOP	BOTTOM	ТОР	BOTTO	М					
ORMATION	DEPTH IN FT	DEPTH IN F		DEPTH IN	FT DESCRIBI	ROCK TYPE	AND R	ECORD	QUANT	ITYAND
	NAME TVD	TVD	MD	MD	TYPE OF	FLUID (FRESH				GAS, H₂S, ET
EE ATTACHED	0		0			_	SEE AT	TACHE	D	
								_		
							-05	NFD		
						Offic	RELE	NED iii and	Gas	
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							WV De	parta Pr	t ot otection	
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Please insert ad	 ditional pages a	s applicable						_		
			nt. / Decker Prod	Hole						
Address 11565			City			State	он	Zin	45784	
11								P _		
	any Appalachia	n Well Survey		Cambrid	20	6 4 4	он		43725	
Address 10291	Onio Ave.		City	Cambrid	<u>de</u>	State			43725	
Cementing Cor	npany BJ Servi	ces								
Address 3415 M	fillennium Blvd. SE		City	Massillor	n	State	ОН	Zip	44646	
Stimulating Co	mpany N/A									
Address			City			State		Zip		
Please insert ad	ditional pages	as applicable								
Completed by	, Andrew Neill f	iled by Emily	Potesta - Regulat	orv Agent	Talamba	ne (740) 885	5-9635			
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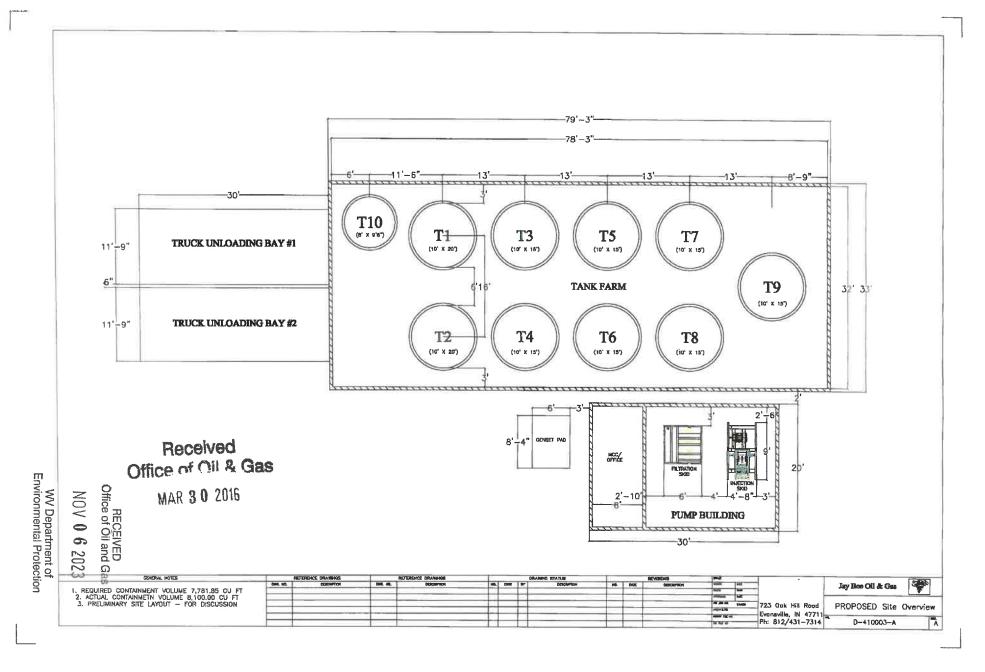
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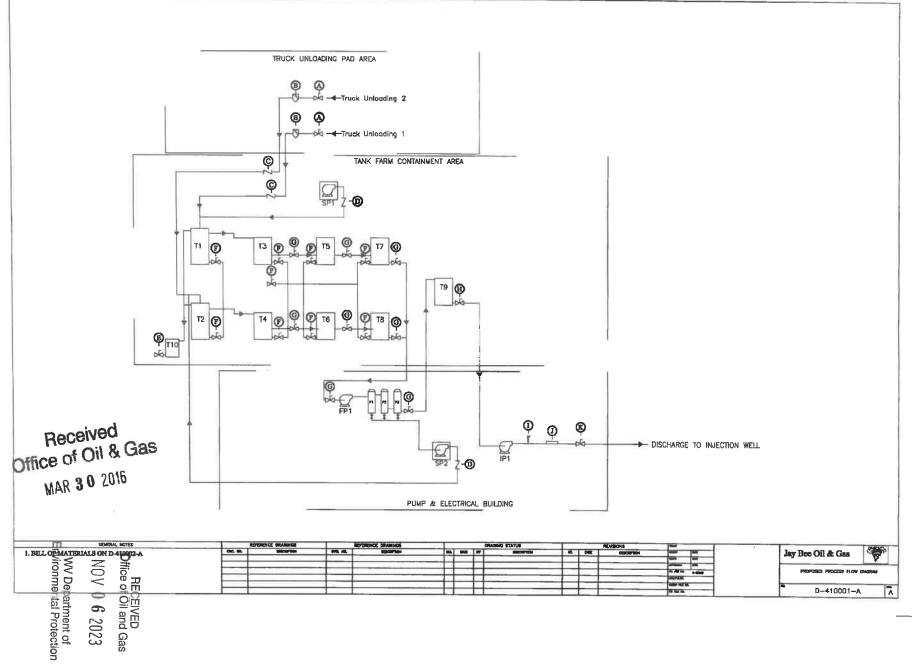
APPENDIX B Storage Tank Inventory

API #	Tank ID	Tank Lo (UTM NAD) Northing		Installation Date	Tank Age (Months)	Construction Material (Steel, plastic, etc.)	Capacity (gallons)	Type of Fluid Stored	Volume of Fluid Stored (gallons)	Tank Type Single/Double Wall
043-00004018	Tank12	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
043-00004019	Tank5	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
043-00004020	Tank8	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
043-00004021	Tank10	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
043-00004022	Tank11	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
043-00004023	Tank13	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
043-00004024	Tnk14	39.262641	81.074876	06/2020		Steel	11760	Brine		Single
043-00004025	Tank15	39.262785	81.074623	06/2020		Steel	8820	Petroleum Oil		Single
043-00004026	Tank6	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
043-00004027	Tank9	39.262641	81.074876	06/2020		Steel	11760	Brine		Single
043-00004028	Tank3	39.262352	81.074623	06/2020		Steel	8820	Brine		Single
043-00004029	Tank4	39.262352	81.074623	06/2020		Steel	8820	Brine		Single
043-00004030	Tank1	39.262352	81.074623	06/2020		Steel	8820	Brine		Single
043-00004031	Tank2	39.262352	81.074623	06/2020		Steel	8820	Brine		Single
043-00004032	Tank7	39.262641	81.074876	06/2020		Steel	16800	Brine		Single
Environme	Z	2								
Devart nme tal	NOV									

Dil and Gas Oil and Gas 6 2023 atment of tal Protection







		BILL OF MATERIALS - FITTINGS
ITEM #	QTY	DESCRIPTION
A	2	3" BALL VALVE, THRD, FULL PORT
B	2	STRAINER BASKET, 3", CI HSG, SST SCREEN, 9/16 PERF
C	2	3" CHECK VALVE, FLAP TYPE, THRD
U	2	2" CHECK VALVE, FLAP TYPE, THRD
E	1	2" BALL VALVE, THRD, FULL PORT * SEE NOTE
E	8	3" BUTTERFLY VALVE, LUG TYPE, 150#
G	8	4" BUTTERFLY VALVE, LUG TYPE, 150#
н	1	6" BUTTERFLY VALVE, LUG TYPE, MANUAL, 150
1	1 1	RELIEF VALVE, BAIRD, MECHANICAL, SET AT ZO% DVR PRESSURE
1	1	FLOW METER, TURBINE TYPE, 2", W/DIGITAL MONITOR
ĸ	1	2" GATE VALVE, FLGD, 1500#, CI/SST

* NOTE: 2" BALL VALVES WILL BE USED FOR DRAINS ON EACH TANK.

		BILL OF MATERIALS - TANKS
ITEM 3	QTY	DESCRIPTION
. 11	1.	280 BBL GUN BARREL, 10' X 20', STEEL, LINED
12	1 1	280 BBL GUN BARREL, 10' X 20', STEEL, LINED
13	1	210 BBL RAW (DIRTY) WATER TANK, 12' X 15', STEEL, LINED
T4	1	210 BBL RAW (DIRTY) WATER TANK, 12' X 15', STEEL, LINED
T5	1	210 BBL RAW (DIRTY) WATER TANK, 12' X 15', STEEL, LINED
15	1	210 BBL RAW (DIRTY) WATER TANK, 12' X 15', STEEL, LINED
17	1	210 BBL RAW (DIRTY) WATER TANK, 10' x 15', STEEL, LINED
18	1	210 BBL RAW (DIRTY) WATER TANK, 10' X 15', STEEL, LINET
19	1	210 BBL CLEAN WATER TANK, 10' X 15', STEEL, LINED
110	1	100 BBL OIL TANK, B' X 9' 6", STEEL

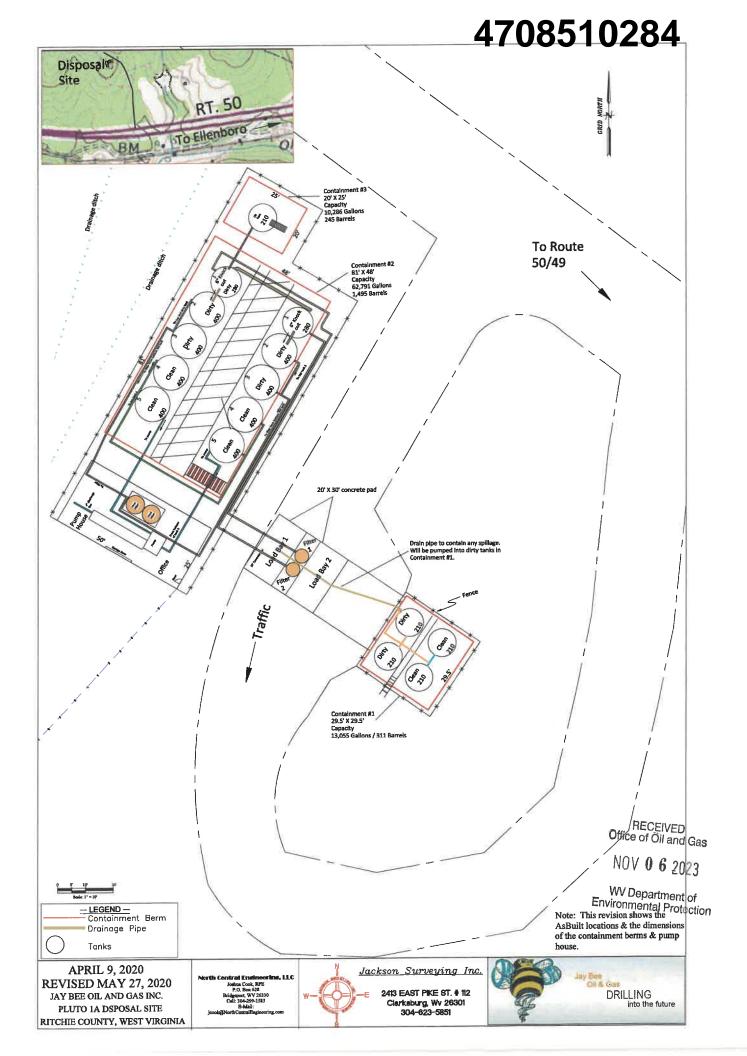
ITEM #	OTY	DESCRIPTION
SP1	1	SUMP PUMP, SST, 1HP, ELECTRIC, W/FLOAT
SP2	1	SUMP PUMP, SST, 1HP, ELECTRIC, W/FLOAT
191	1	INJECTION POMP. NOV TOOT 4M, 1400 BPD @ 2500 PS
£.b	1	FILTRATION PUMP CENTRIFUGAL, ANSI

		BILL OF MATERIALS - FILTERS
ITEM #	QTY	DESCRIPTION
FP1	1	LAKOS MODEL ILS CENTRIFUGAL SEPARATOR
FP2	2	BAG FILTER, SIZE Z. SST, OVER-THE-TOP
FP3	1	NOWATA FILTER VESSEL, CARTRIDGE TYPE, 5ST TRIM, EPOXY

Received Office of Oil & Gas

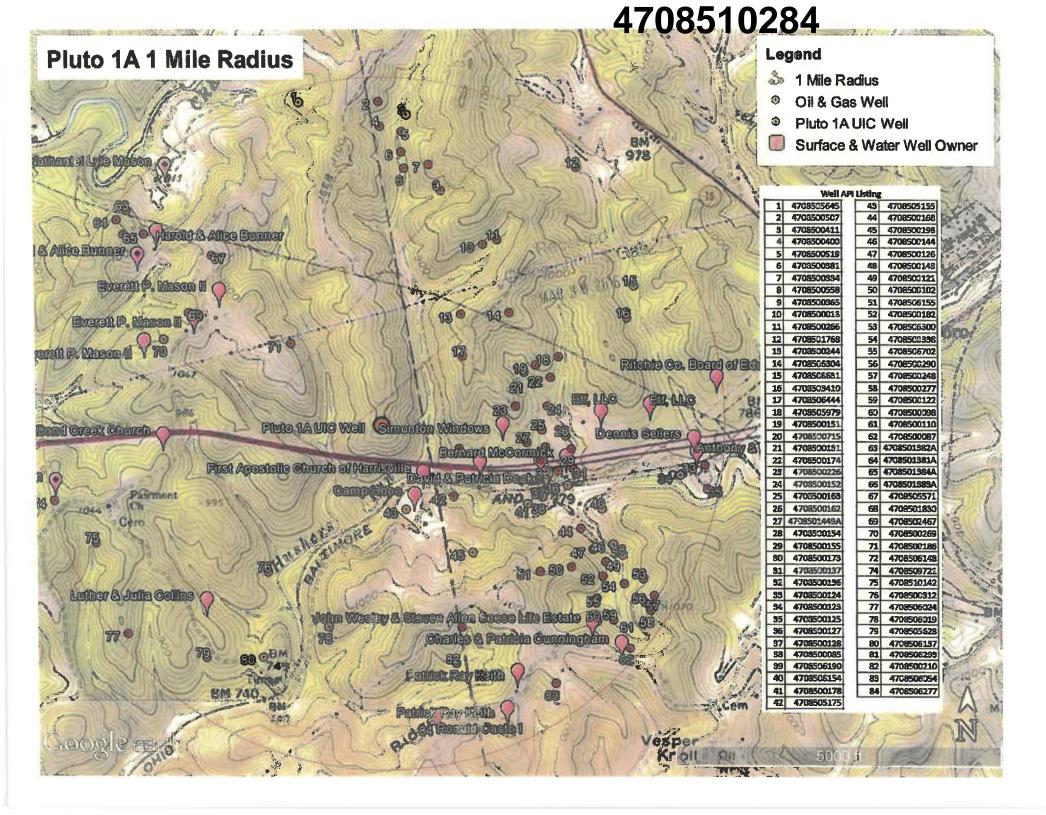
MAR 30 2016

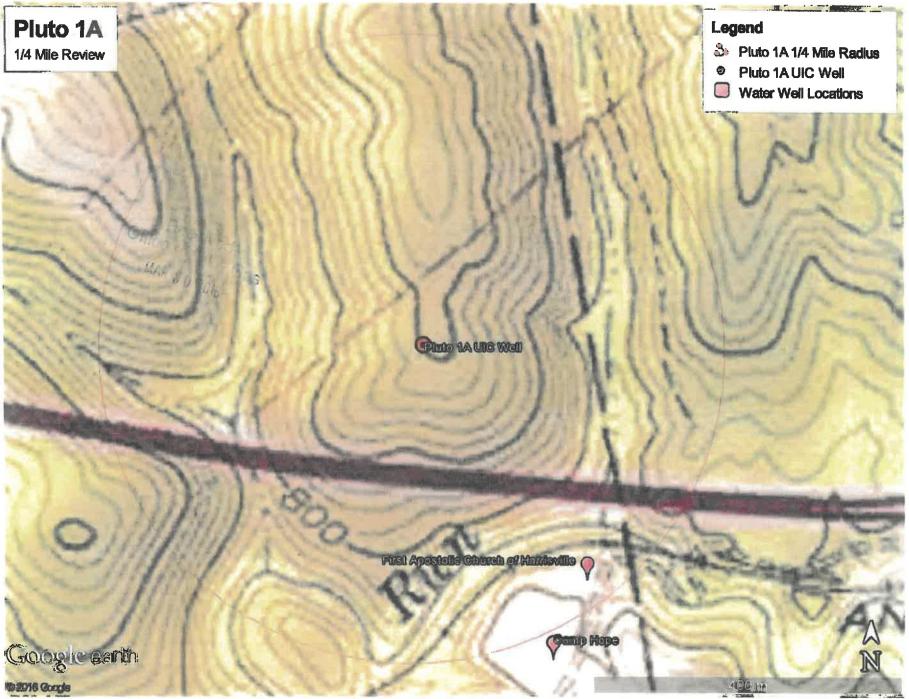




Place Holder

Section 7 - Area of Review





Appendix C - 1/4 Mile AOR 4708510284

	API # Name / N	o. Easting	Northing	Well Status	Well Type	Penetrate Injection Zone	Penetrate Confining Zone	Surface Elevation	Total Verticle Depth
1	4708505755 Hissem Ball 1	493044.5	4345426.9	Plugged	Gas	Ν	Ν	805	5580
2	4708506148 Hosea Grimes	1 492567.2	4345596.5	Active	Gas	Ν	Ν	940	5784
3	4708570061 Fox Biddie 1	493007.9	4345583.0	Unknown	Unknown	Ν	Ν	Unknown	Unknown
4	4708591223 Unknown	492824.7	4345452.7	Unknown	Unknown	Ν	Ν	Unknown	Unknown
5	4708591224 Unknown	492880.4	4346080.8	Unknown	Unknown	Ν	Ν	Unknown	Unknown

WVGES O&G Record Reporting System 4708570061

Plugging

Sample

Stm Hole Loc

Production

Stratigraphy

WVGES	Select County:	(085) Ritchie	~	Select datatypes: 🗌 (Check All)
	Enter Permit #:	70061		Location	Product
GEOLOGY UNDERLIES IT ALL "Pipeline"	Get Data	Reset		Owner/Completion	Stratigr
ripenne	Ger Data	Reset		Pay/Show/Water	🗹 Logs

••••••••••••••••••••••••••••••••••••••
Table Descriptions
County Code Translations
Permit-Numbering Series
Usage Notes
Contact Information
Disclaimer
WVGES Main
"Pipeline-Plus" New

WV Geological & Economic Survey:

Well: County = 85 Permit = 70061 Link to all digital records

Report Time: Friday, March 29, 2024 1:56:56 PM

Location Information: View Map

API COUNTY PERMIT AX_DISTRICT QUAD_75 QUAD_15 LAT_DD LON_DD UTME UTMN 4708570061 Ritchie 70061 Clay Ellenboro St. Marys 39.259551 -81.081045 493007.9 4345583

for well

There is no Bottom Hole Location data for this well

Owner Information:

API CMP_DT SUFFIX 4708570061 -/-/1922 Original I STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR Original Loc Completed Fox Biddie 1 Findley, Frank

Completion Information:

API CMP_DT_SPUD_DT_ELEV_DATUM_FIELD_DEEPEST_FM_DEEPEST_FMT_INITIAL_CLASS_FINAL_CLASS_TYPE 4708570061 -/-/1922 -/-/- unclassified unclassified not ava RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AF not available unknown unknown unclassified

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well ** some operators may have reported NGL under Oil

There is no Production NGL data for this well ** some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

Wireline (E-Log) Information:

* There is no Scanned/Raster Log data for this well

* There is no Digitized/LAS Log data for this well

* There is no Scanned or Digital Logs available for download

There is no Plugging data for this well

There is no Sample data for this well

GEOLOGY UNDERLIES IT "Pipeline"

	WVG	ES O&G Record Repo	orting System	47084	5 <u>91222</u>
Select County: (085) Ritchie Enter Permit #: 91222	~	Select datatypes: (Contemporation	Check All)	✓ Plugging	County Code Translations Permit-Numbering Series Usage Notes
Get Data Reset			Stratigraphy Cogs		Contact Information Disclaimer WVGES Main
					"Pipeline-Plus" New

WV Geological & Economic Survey:		-V/-	igital rec		nt – 5122	Report Time:	Friday, March 29, 2024 2:29:31 PM			
Location Ir	formatio	n: <u>Viev</u>	<u>v Map</u>						_	
API 4708591222		PERMIT 91222	TAX_DISTRICT Grant			LON_DD -81.081408	UTME 492976.4	UTMN 4345388.1		
There is no	o Bottom	Hole Lo	cation data fo	r this well						
There is no	o Owner/	Complet	ion data for th	is well						
There is no	o Owner/	Complet	ion data for th	is well						
There is no	o Pay dat	a for this	s well							

Well: County = 85 Permit = 91222 Link to all

There is no Production Gas data for this well

There is no Production Oil data for this well ** some operators may have reported NGL under Oil

There is no Production NGL data for this well ** some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

- Wireline (E-Log) Information:
- * There is no Digitized/LAS Log data for this well

* There is no Scanned or Digital Logs available for download

There is no Plugging data for this well

There is no Sample data for this well

* There is no Scanned/Raster Log data for this well

GEOLOGY UNDERLIES IT ALL "Pipeline"

WV Geological & Economic Survey:

		WVG	ES O&G Record Repo	orting System	4708	591223
Select County:	(085) Ritchie	~	Select datatypes: 🗌 (<u>Table Descriptions</u> <u>County Code Translations</u>
Enter Permit #:	91223		Location	Production	Plugging	Permit-Numbering Series Usage Notes
Get Data	Reset		Owner/Completion	🗹 Stratigraphy		Contact Information Disclaimer
Ger Data	Resei		✓ Pay/Show/Water	🗹 Logs	🗹 Btm Hole Loc	WVGES Main
						"Pipeline-Plus" New

Report Time: Friday, March 29, 2024 2:30:19 PM

Location Information: View Map									
API 4708591223		PERMIT 91223	TAX_DISTRICT Grant	QUAD_75 Ellenboro			LON_DD -81.083167	UTME 492824.7	UTMN 4345452.7
There is no Bottom Hole Location data for this well									
There is no Owner/Completion data for this well									
There is no	Owner/0	Complet	ion data for thi	s well					
There is no	Pay dat	a for this	s well						
There is no	Product	ion Gas	data for this w	ell					
There is no	Product	ion Oil d	ata for this we	ll ** som	ie operato	ors may ha	ive reporte	d NGL u	nder Oil
There is no Production NGL data for this well ** some operators may have reported NGL under Oil									
There is no Production Water data for this well									
There is no Stratigraphy data for this well									
Wireline (E	-Log) Inf	ormatior	1:						

Well: County = 85 Permit = 91223 Link to all

* There is no Scanned/Raster Log data for this well

* There is no Digitized/LAS Log data for this well

* There is no Scanned or Digital Logs available for download

There is no Plugging data for this well

There is no Sample data for this well

digital records for well

GEOLOGY UNDERLIES IT ALL "Pipeline"

WV Geological & Economic Survey:

	WVG	ES O&G Record Repo	orting System	17085	591224
Select County: (085) Ritchie 🗸 🗸	Select datatypes: 🗌 (Check All)		Table Descriptions County Code Translations
Enter Permit #: 9122	24	Location	Production	Plugging	Permit-Numbering Series Usage Notes
		Owner/Completion	🗹 Stratigraphy	🗹 Sample	Contact Information
Get Data Re	eset	✓ Pay/Show/Water	🗹 Logs	🗹 Btm Hole Loc	Disclaimer WVGES Main
					"Pipeline-Plus" New

Report Time: Friday, March 29, 2024 2:32:25 PM

Location In	formation	n: <u>Viev</u>	<u>v Map</u>						
API			TAX_DISTRICT				LON_DD	UTME	UTMN
4708591224	Ritchie	91224	Grant	Ellenboro	St. Marys	39.264036	-81.082528	492880.4	4346080.8
There is no	Bottom	Hole Lo	cation data for	this well					
There is no	o Owner/0	Complet	ion data for thi	s well					
There is no	o Owner/0	Complet	ion data for thi	s well					
There is no	Pay dat	a for this	s well						
There is no	Product	ion Gas	data for this w	vell					
There is no	Product	ion Oil d	lata for this we	ell ** som	ne operato	ors may ha	ave reporte	ed NGL u	nder Oil
There is no	Product	ion NGL	. data for this v	vell ** so	ome opera	itors may l	have repor	ted NGL	under Oil
There is no	Product	ion Wate	er data for this	well					
There is no	Stratigra	aphy dat	a for this well						
Wireline (E-Log) Information: * There is no Scanned/Raster Log data for this well									
* There is r	no Digitiz	ed/LAS	Log data for th	is well					
* There is r	no Scann	ed or Di	gital Logs ava	ilable for o	download				

digital records for well

Well: County = 85 Permit = 91224 Link to all

There is no Plugging data for this well

There is no Sample data for this well

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION 4708505755 OFFICE OF OIL AND GAS

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Department, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name:	Hissem-	Ball		2	_Opera	ator We	ell No.;_	1				
LOCATION:					Qua	adrangle	Elle	nborc	7.5			
LOUATION.		Grant				unty:	Ritc	hie				FD
	District		5		_	•			NΔ	0		& Gas
		39.25814						Min.		Sec.	OCT 19	2022
	Longitude	e: -81.080	Feet	West of	INA	Deg	. <u>NA</u>	Min	NA	Sec.		
Well Type: C	DIL <u>×</u>	_ GAS <u>X</u>				C.					WV Depar Environmenta	Iment of Protection
Company	Haught I	Energy Co	rporation	Coal O	perato	r NA						
1 2	12864 Stat	unton TPKE		or Own	er							
	Smithville,	WV 26178										
				Coal C	perato	or NA						
Agent	Brian Ha	aught		or Own	er							
Permit Issue	ed Date	6-17-202	1			-						
					FFID/							
STATE OF W County of Ritch		INIA, ss:		~							•	
Brian Haught		and	Mike Goff				bein	ig first	duly sw	orn accordi	ing to law depose	
and say that th	ey are exp	erienced in th	ne work of	plugging	and filli	ing oil ar	td gas w	elis an	d were en	nployed by I	the above named	
well operator,	and partic	ipated in the	work of pl	udding a	nd filli	na the a	bove we	l say	that said	i work wa	s commenced on	
the 21st	day of	July	, 2022	, and the	well w	vas plug	ged and	l filled	in the foll	owing man	iner:	
700		DOM				PIPE R		=D		LEA	FT	
TYPE		ROM	T(391	-		Bridge Plug				4-1/2" C		
Brine Water Class A Cement Pl	hua	5560 3917	329		Jerr		NA	d don	4-1/2		3/8 tubing - filled in	
Bentonite Gel Spar		3290	134				3" tubing			4-1/2" C		
Class A Cement Pl		1348	966				" Casing			8-5/8" Casi		
Bentonite Gel Spa		960	84(" Casing			8-5/8" Casi	ing (CTS)	
Class A Cement Pl		840	740	0		4-1/2	" Casing			8-5/8" Casi	ing (CTS)	
Bentonite Gel Spa	-	740	240	0		4-1/2	" Casing			8-5/8" Casi	ing (CTS)	
		240	Surfa	ice		4-1/2	" Casing			8-5/8" Casi		
Description	of monume	ent: 7" Casing w	ifh Stamped A	Juminum Sig	nage	20122		ar	nd that the	ew_ork of p	blugging and filling	
said well was o	completed	on the <u>11th</u>	_ day of Au	Igust	0	= 29 22						
A weak for which a w	deeconorfo	softh not	13		E	J			5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	OFFICIAL SEAL	~~
And further	deponents	i saith noit.			1	1			10.5	A CT	NOTARY PUBLIC	{
			Judio	al 2	all	!			13,000		TE OF WEST VIRGINIA Hannah M Weiford	{
Sworn and	subscribe l	before me thi	s <u>5</u> d	lay of _O	ud	per	, 20 <u>7</u>	2		Му Сотл	PO Box 22 Smithville, WV 26178 nission Expires October 18, 20	23
My commissio	n expires:_	10/18/20	23		_	tamo	hMV Notary F	July Public	L			
Affidavit reviev	ved by the	Office of Oil	and Gas: _	itephen	Мссо	y Digitally sig Date: 2022.	•		Title:	WV Oil	and Gas Inspe	ector



IV-35 (Rev 8-81)

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State of Mest Airginia Vepartment of Alines Gil und Cas Nivision

Date December 8, 19	82	2	
Verator's Vell No. ONE (#1		:	
arm HISSEM - BALL	•	• ·	· .
PI No. 47- '085 -		5	755

WELL OPERATOR'S REPORT

OF DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil x / Gas x / Liquid Injection / Waste Disposal / (If "Gas," Production x / Underground Storage / Deep / Shallow /

LOCATION	: Elevation:	8051	Watersh	ed <u>Hus</u>	HERS RUN-	
ية مير ميروند . وفي في المريون	District:	Grant	County_	Ritchie	Quadrangle	Ellenboro 7.5'
			1	•	······································	

COMPANY PANTHER FUEL COMPANY ADDRESS P. O. Box 850, Bridgeport, WV Cement 26330 Caşing Used in Ieft . fill up DESIGNATED AGENT DONNALLY VILLERS Tubing Drilling in Well Cu. ft. ADDRESS P. 0; Box 647, Weston, WV 26452 Size SURFACE OWNER Claude C. Hissem 20-16 Cond. ADDRESS Box 263, Ellenboro, WV 26346 13-10" MINERAL RIGHTS OWNER C. C. Hissem 9 5/8 ADDRESS Box 263, Ellenboro, WV 26346 8 5/8 1,010 1,010 surfac to OIL AND GAS INSPECTOR FOR THIS WORK Samuel N. 7 Emithville, WV ADDRESS Hersman 26178 5 1/2 PERMIT ISSUED July 6, 1982 4 1/2- 1 5,560 600 sacks DRILLING COMMENCED September 29, 1982 3 DRILLING COMPLETED October 6, 1982 2 PLUGGING OF DRY HOLE ON IF APPLICABLE: CONTINUOUS PROGRESSION FROM DRILLING OR Liners REWORKING. VERBAL PERMISSION OBTAINED used ON

 GEOLOGICAL TARGET FORMATION
 Marcellus
 Depth 5,950
 feet

 Depth of completed well 5,580
 feet Rotary x / Cable Tools

 Water strata depth:
 Fresh
 feet; Salt
 feet

 Coal seam depths;
 Is coal being mined in the area?
 is coal being mined in the area?

OPEN FLOW DATA 5,150 to Producing formation Hamilton Shale Pay zone depth 5,580 feet Oil: Initial open flow Initial open flow show Mcf/d -0- ,Bb1/d Final open flow 500 Mcf/d Final open flow _0_ · Bb1/d Time of open flow between initial and final tests 7 72 hours Static rock pressure 1.450 psig(surface.measurement) after 4 hours shut in (If applicable due to multiple completion --) 950 to Second producing formation Brallier Shale Pay zone depth 4,200 feet Initial open flow Mcf/d Oil; Initial open flow Show Bbl/d Gas: Show

Final open flow <u>300</u> Mcf/d Oil: Final open flow <u>Show Bbl/d</u> Time of open flow between initial and final tests <u>72</u> hours Static rock pressure <u>650</u> psig(surface measurement) after 4 hours shut in

(Continue on reverse side)

FULM IV-35 (PEVERSE)

58

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DETAILS OF PERFORATED INTERVALS, FRACIURING OR STIMULATING, PHYSICAL CHANGE, ETC.

(1. Halliburton (1. 1. 018,000 : 1) N2 ? per stage Seven (7) High Volume

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WATE OF EFAMINES REPORT

DETERMON PRACESTER ACTION STIMULATING, OR FRENCH, CANNE

() Cas y) Linuid In willion / Second V / Sharpond V / Shaller

FORMATION COLOR HARD OR S	OFT TOP FEET	BOTTOM FEET	Including indication of all frest and salt water, coal, oil and gas
Big Lime	1,648'	1,820	
Big Injun	1,830.	1,870	Million Oil and Gas
a server oup	C:: 2,232		
Gordon Sand	-2,445	2,470	Gas Robins Gas
Fifth Sand	2,635	2,645	Gas martine with
Brallier Shale	"C 2,860	.075	GASSIE Oil and Gas
Harrell Shale	- 4,075	5,128	Gas
Hamilton Shale	5,120	18.25,580 a	Gas Gas
			William Million and and and the
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V Cable Tools			su patalogue d'auge
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Note: Regulation 2.02(i) provides as follows: "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including wirl, encountered in the drilling of a well."



OIL & GAS DIVISION T (Rev DEPT. OF.N

State of Mest Airginia Department of Alines Gil und Gas Zivision

See			
Date	Septent	er ¹ 1,	1983
Operat	tor's No. <u>One</u>	•	,
Farm	Grimes		
API N	5. 47 -	085 -	6148

WELL OPERATOR'S REPORT

OF FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE DRILLING,

Oil x WELL d Inj TYPE ection Waste Disposal tion X / Underground Storage Shallow Deen LOCATION:

940 Watershed Hushers Run Elevation:

District: Count Ritchie-Clay. ٠. Quadrangle Ellenboro 7.

COMPANY' Panther Fuel Co.			~			
ADDRESS P.O. Box 850, Bridgeport, W.va. 26330.	Casing	Used in	Jof+	Cement		
DESIGNATED AGENT Dave Harmer	Tubing	Drilling	· · ·	fill up Cu. ft.		
ADDRESS P.O. Box 850, Bridgeport, W.Va. 26330	- Size		TU METT			
SURFACE OWNER Grimes Heirs	20-16 Cond.	•		•		
ADDRESS Ellenboro, W.Va.	13-10"					
MINERAL RIGHTS OWNER Grimes Heirs	9'5/8			· · · ·		
ADDRESS Ellenboro, W.Va.	8 5/8	1,157	1,157	to surface		
OIL AND GAS INSPECTOR FOR THIS WORK Samuel	7	1,157	1,137			
Hersman ADDRESS Smithville', W.Va.	5 1/2		· · · ·			
PERMIT ISSUED		· ·	F 776	650		
DRILLING COMMENCED March 23, 1983	4 1/2		ວ,720 ຄ	650 sacks		
DRILLING COMPLETED March 30, 1983.	2	•	7			
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED	Liners used		/ /			
Depth of completed well 5,784 feet Water strata depth: Fresh 70 feet;		— · /				
Coal seam depths:				area?		
OPEN FLOW DATA Producing formation <u>Hamilton Shale</u>	¥ (5)	zone depi	.0			
Gas: Initial open flow show Mcf/d	•	•				
Final open flow Mcf/d						
Time of open flow between init						
Static rock pressure 880 paig (surface	٠.			••••		
If applicable due to multiple completion			- <u></u>			
Second producing formation - Harrett Shal	(zone dept	th -4,780	feet		
Gas: Initial open flow show Mct/d						
Final open flow 380 Nof/d r Oil: Final open flow show Bb1/d						
Time of open flow between initial and final tests hours						
Static rock pressurepaig (surface	•					

- : - 6.TAHIS (- - - -

DETAILS OF PERFORMED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, EIC. 4. stages: Nowsco 750 mscf. of N2 per stage, approximately 40 holes.

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		2.4.5 11.4.5 g	
FORMATION COLOR HARD OR SOFT	TOP FEET	BOTICM FEET	«REMARKS Including indication of all fresh and salt water, coul, oil and gas
	1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
.Big·Lime	1,822	1,870	
Keener Sand	870	1,912	Gas show
Big Injun	1,920	2,032	Show oil & gas
, Weir Sandy-Shale	2,122	2,220	Show gas
Gantz Sand	2,260	2,470	A state of the state of the
Gordon Sand	2,510	2,550	Show gas
Fifth Sand	2,810	2,820	"Show oil & gas
Brallier Shale Top	2,990	•	C 1 20 1 20 1 20 1
Warren Shale	3,400 🚊	3,565	Oil & gas
Brallier Shale Bottom	-	4,050	Oil & gas
'Harrell Shale Top	4,050		Oil & gas
Benson Horizon	4,710	4,780	Gas
Harrell Shale Bottom	•	5,122	The second second second second second
Hamilton Shale	5,122 .	5,784	Gas
		W3 324.0	A SUBSTITUTE PLOCE WE SU
	20 Minut	26 (N.1.1.3 (1997) - 1997) - 1997) - 1997) - 1997) (1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997) - 1997)	
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81011 91693 V			(au 1) second and a second second
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	(Attach spp	arate sheets	as necessary)
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1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Panth	er Fuel/Co.	·A/
		Jult /	STA
	By:	WA US	, Vice President
		January 1,	1903 -
Carl Carl Carl			
	EST - A SARA		
Note: Regulation 2.02(i) pro "The term 'log' or .ictailed geological re !, encountered in t	'well.log'; cord of all	shall mean a formations,	systematic including
in concerce on concerce	···· ··· ·····························	~	

WELL LOGA

Appendix C - Special Condition Wells

	API #	Name / No.	Easting	Northing	Well Status	Well Type	Penetrate Injection Zone	Penetrate Confining Zone	Surface Elevation	Total Verticle Depth
1	4708505571	Everett Mason 2	492149.4	4346579.5	Abandoned	Oil	Ν	Ν	1050	4296
2	4708505628	Maxine & Foster Smith	492050.9	4344727.3	Abandoned	Gas	Ν	Ν	860	5926
3	4708505645	Everett Mason 1	492601.0	4347319.9	Active	Gas	Ν	Ν	950	4514
4	4708505978	EPI 1	493359.8	4345660.3	Abandoned	Gas	Ν	Ν	825	Unknown
5	4708505979	EPI 2	493762.8	4346110.9	Active	Oil	Ν	Ν	852	6095
6	4708506019	Cross 1	492695.3	4344855.5	Active	Gas	Ν	Ν	895	4980
7	4708506024 \$	Smith 2	491680.6	4344824.3	Active	Gas	Ν	Ν	930	5059
8	4708506054	Benjamin McVay 2	493761.6	4344580.8	Active	Gas	Ν	Ν	1030	3130
9	4708506137	A.J. Rexroad 1-A	492324.7	4344662.6	Abandoned	House Gas	Ν	Ν	850	5722
10	4708506148	Hosea Grimes 1	492567.2	4345596.5	Active	Gas	Ν	Ν	940	5784
11	4708506154	EPI-7	493955.5	4345418.2	Active	Gas	Ν	Ν	858	5021
12	4708506155	EPI-8	493649.3	4345112.4	Active	Gas	Ν	Ν	1004	5108
13	4708506190	Russel Richards 1	493649.5	4345434.5	Active	Gas	Ν	Ν	770	5520
14	4708506277	H-1378	493203.4	4344402.8	Abandoned	Gas	Ν	Ν	1059	4288
15	4708506293	Benjamin McVay 1	493278.6	4344887.2	Active	Gas	Ν	Ν	985	5839
16	4708506304	EPI-13	493553.6	4346336.6	Active	Gas	Ν	Ν	1039	5010
17	4708506444	EPI-12	493295.8	4346111.3	Abandoned	Gas	Ν	Ν	1024	5007
18	4708508631	Dawson-Fox 3	494133.4	4346416.6	Active	Gas	Ν	Ν	830	1698

	er state	4 /	JCON)5571
RECEIVED			$\sim 10^{-1}$	
V-36	Listing and the second			982:
ev 8-81) OCT 1 9 1982 OIL AND GAS DIVISION State of He	28	· Operato	or's 2B	
WW DEPARTMENT OF MINES	- N - M		erett Mas	M. 1. 1. 1.
Bepartment Gil und Cas	-	.0		5571
	. 6.00.000			
WELL OPERATOR	N'S REPORT			
OF DRILLING, FRACTURING AND/OR STIN	ULATING, C	R PHYSICAL	L CHANGE	
ELL TYPE: Oil x /- Gas x / Liquid Injectio	on_/Wast	e Disposa	1/	
(If "Gas," Production x / Undergro	ound Storag	je/ Deej	p/ Sha	110w_x/)
OCATION: Levation: 160 Watershed	Bonds Cies	e k	• •	
District: Grant County . Ri	tchie	Quadrangle	e Ellenb	oro
				•••
OMPANY Kober Oil, Inc.				r
DDRESS Rt. 1, Box 51A, Cairo, WV 26337	Casing	Used in	left	Cement fill up
ESIGNATED AGENT Durl Fluharty	Tubing	Drilling	in Well	Cu. ft.
· · · · · · · · · · · · · · · · · · ·				
DDRESS 425 S. Spring St., Harrisville, WV 26362	1 JIZE		•	
URFACE OWNER Everett Mason - B Farm	20-16 Cond.		•	
URFACE OWNER Everett Mason - B_Farm DDRESSLinn, West Virginia _26344	20-16	216'	216'	Cement to :
URFACE OWNER Everett Mason - B Farm DDRESS Linn, West Virginia 26344 IINERAL RIGHIS OWNER Everett Mason - B Farm	20-16 Cond.	216'	216'	Cement to :
URFACE OWNER <u>Everett Mason - B Farm</u> DDRESS Linn, West Virginia ⁽ 26344) HINERAL RIGHTS OWNER <u>Everett Mason - B Farm</u> DDRESS Linn, West Virginia 26344	20-16 Cord. 11-3/4 13-10 ⁴ 9 5/8	216'	216'	Cement to :
URFACE OWNER <u>Everett Mason - B Farm</u> DDRESS Linn, West Virginia 26344 INERAL RIGHIS OWNER <u>Everett Mason - B Farm</u> DDRESS Linn, West Virginia 26344 OIL AND GAS INSPECTOR FOR THIS WORK <u>Sam</u>	20-16 Cond. 11-3/4" 13-10"	216'	216'	Cement to :
URFACE OWNER <u>Everett Mason - B Farm</u> DDRESS Linn, West Virginia 26344 UNERAL RIGHIS OWNER <u>Everett Mason - B Farm</u> DDRESS Linn, West Virginia 26344 OIL AND GAS INSPECTOR FOR THIS WORK <u>Sam</u> <u>ADDRESS Smithville</u> , WV 26178	20-16 Cond. 11-3/4 13-10 ⁴ 9 5/8 8 5'/8	216'	216'	Cement to :
URFACE OWNER <u>Everett Mason - B.Farm</u> DDRESS Linn, West Virginia 26344 UNERAL RIGHTS OWNER <u>Everett Mason - B.Farm</u> DDRESS Linn, West Virginia 26344 OIL AND GAS INSPECTOR FOR THIS WORK <u>Sam</u> ersman <u>ADDRESS Smithville</u> , WV 26178 DERMIT ISSUED <u>April 19, 1982</u>	9 5/8 8 5 ['] /8	<u>216'</u> 4209 *	216'	Cement to s
URFACE OWNER Everett Mason - B.Farm DDRESS Linn, West Virginia 26344 IINERAL RIGHTS OWNER Everett Mason - B Farm DDRESS Linn, West Virginia 26344 DDRESS Linn, West Virginia 26344 DIL AND GAS INSPECTOR FOR THIS WORK Sam 1 ersman ADDRESS Smithville, WV 26178 DERMIT ISSUED April 19, 1982	20-16 Cord. 11-3/4" <u>13-10"</u> <u>9 5/8</u> <u>8 5'/8</u> <u>7</u> <u>5 1/2</u>		•	<
SURFACE OWNER Everett Mason - B.Farm DDRESS Linn, West Virginia 26344 IINERAL RIGHTS OWNER Everett Mason - B Farm DDRESS Linn, West Virginia 26344 ODRESS Smithville, WV 26178 PERMIT ISSUED April 19, 1982 ORILLING COMMENCED S-7-S2	312 20-16 Cord. 11-3/4" 13-10" 9 5/8 8 5'/8 7 5 1/2 . 4 1/2	4209 *	4209'	<
SURFACE OWNER Everett Mason - B. Farm DDRESS Linn, West Virginia 26344 HINERAL RIGHTS OWNER Everett Mason - B Farm DDRESS Linn, West Virginia 26344 ODRESS Smithville, WV 26178 ersman ADDRESS Smithville, WV 26178 ORILLING COMMENCED $\mathcal{J} - \mathcal{J} - \mathcal{J} \mathcal{J}$ \mathcal{J} ORILLING COMPLETED $\mathcal{J} - \mathcal{J} - \mathcal{J} \mathcal{J}$ \mathcal{J} ORILLING COMPLETED $\mathcal{J} - \mathcal{J} - \mathcal{J} \mathcal{J}$ \mathcal{J} OF APPLICABLE: PLUCGING OF DRY HOLE ON \mathcal{J}	$ \begin{array}{r} 312e \\ 20-16 \\ Cord. \\ 11-3/4'' \\ \overline{13-10''} \\ 9 5/8 \\ \overline{8} 5'/8 \\ 7 \\ 5 1/2 \\ 4 1/2 \\ 3 \\ 2 \end{array} $	4209 *	4209'	<
SURFACE OWNER Everett Mason - B. Farm DDRESS Linn, West Virginia 26344 HINERAL RIGHTS OWNER Everett Mason - B Farm DDRESS Linn, West Virginia 26344 ODRESS Smithville, WV 26178 PERMIT ISSUED April 19, 1982 ORILLING COMMENCED S-11-S S ORILLING COMPLETED S-11-S S	$ \begin{array}{r} 312e \\ 20-16 \\ Cond. \\ \overline{1-3/4''} \\ \overline{13-10''} \\ 9 5/8 \\ 8 5'/8 \\ 7 \\ 5 1/2 \\ 4 1/2 \\ 3 \end{array} $	4209 *	4209'	<
SURFACE OWNER Everett Mason - B.Farm DDRESS Linn, West Virginia 26344 HNERAL RIGHTS OWNER Everett Mason - B Farm DDRESS Linn, West Virginia 26344 DIL AND GAS INSPECTOR FOR THIS WORK Sam	$ \begin{array}{r} 312e \\ 20-16 \\ Cord. \\ 11-3/4'' \\ \overline{13-10''} \\ 9 5/8 \\ 8 5'/8 \\ 7 \\ 5 1/2 \\ 4 1/2 \\ 3 \\ 2 \\ Liners \end{array} $	4209 *	4209'	600 CTS
SURFACE OWNER Everett Mason - B. Farm DDRESS Linn, West Virginia 26344 HNERAL RIGHTS OWNER Everett Mason - B Farm DDRESS Linn, West Virginia 26344 DDRESS Smithville 26344 DDRESS More Virginia 26344 DDRESS Mest Virginia 26344 DIL AND GAS INSPECTOR FOR THIS WORK Sam ersman ADDRESS Smithville, WV 26178 PERMIT ISSUED April 19, 1982 DRILLING COMPLETED S-//- J DRILLING COMPLETED S-//- J DRILLING COMPLETED S-//- J DRILLING COMPLETED PERMITSION OF DRY HOLE ON ONTINUOUS PROGRESSION FROM DRILLING OR DEWORKING. VERBAL, PERMISSION OBTAINED ONTINUE	$ \begin{array}{r} 312e \\ 20-16 \\ Cord. \\ 11-3/4" \\ \overline{13-10"} \\ 9 5/8 \\ 8 5'/8 \\ 7 \\ 5 1/2 \\ 4 1/2 \\ 3 \\ 2 \\ Liners \\ used \end{array} $	4209	4209'	600 CT'S

OPEN FLOW DATA 3610-3620 Producing formation Devonian Ohis Shale Pay zone depth 3686-3696 feet Gas: Initial open flow 50 Mcf/d Oil (Initial open flow <u>0</u>, ¹ Bp1/q Final open flow____25 Mcf/d Final open flow_ 5 · Bb1/d Time of open flow between initial and final tests 24 hours Static rock pressure 300 psig (surface measurement) after 24 hours shut in (If applicable due to multiple completion--) Second producing formation Pay zone depth feet Mcf/d Oil: Initial open flow_ Gas: Initial open flow Bb1/d Final, open flow Mcf/d Oil: Final open flow Bbi/d

Time of open flow between initial and final tests hours Static rock pressure psig (surface measurement) after hours shut in

(Continue on reverse side)

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FORM IV-(PEVERSE)

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DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

ŵj -• Stage One 3686-3696 1,000,000 scf N2 . . .

• 3610-3620 Stress Frac

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FORMATION COLOR HARD OR SOFT	TOP FEET	BOITOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
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Sandstone & Shale	300	400	
Sandstone & Shale Sandstone & Shale	400	500	
Sandstone & Shale	500	600	
Shale & Sandstone	600	700	
Shale	700	800	
Shale & Sandstone	800	900	
Shale & Sandstone	900	1000	
Shale & Sandstone	1000 /	1100	
Sandy Siltstone & Shaler	1100	1200	
Shale & Sandstone	1200	1300	
Sandstone & Shale	1300	1400	
Sandstone & Shale	1400	1500	
Sandstone & Shale	1500	1600.	
Shale & Sandstone	1600	1700	A State of the second second
Sandstone & Shale	1700	1800	
Shale & Sandstone	1800	1850	
Greenbrier Is	1850	1972	
Big Injun	.1972	2092	
Siltstone & Shale	2072	2200	
Sandy Siltstone & Shale	2200	2300	
Shale	2300	2374	
Berea	2374	2377	
	- Kob	er Oil. Inc. Operator	as necessary) Wood
	Date:	October 15	1982
Note: Regulation 2.02(i) pro "The term 'log' of detailed geological re inst, encountered in t	well log! cord of all	shall mean a formations,	systematic including

4708505628

STRUCT RECEIPTING MARKED STRUCTURE

no.

Co 65

IV-35 (Rev 8-81)



Please note: this IV-35 will replace original submitted dated 10/18/82.

	April 4, 198	33
Operat Well N		
Farm	Maxine & Foste	er Smith
API No	47 - 085	- 5628 Re

Bepartment of Mines Oil und Gas Bivision

WELL OPERATOR'S REPORT

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil XX / Gas XX / Liquid Injection / Waste Disposal / / Deep / Shallow /) IOCATION: Elevation: 860' Watershed Husher's Run District: Grant 'County Ritchie Quadrangle Ellenboro 75'

OMPANY Petroleum Development Corporation	· · · \		· · · · · · · · · · · · · · · · · · ·	
DDRESS P.O. Box 26, Bridgeport, WV 26330	Casing	Used in	Left	Cement
ESIGNATED AGENI Michael L. Edwards	Tubing	Drilling		fill up Cu. ft.
DDRESS P.O. Box 26, Bridgeport, WV 26330	Size			
URFACE OWNER Alfred Blizzard etal	20-16	30'	30'	
DORESS 735 Westview Dr., Belpre, Ohio 45714	Cond.			
INERAL RIGHTS OWNER Maxine & Foster Smith	13-10"	208'	208'	160 sks.
DDRESS 25 G Cape Shores Dr., Cape Canaveral, FL	9 578			
IL AND GAS INSPECTOR FOR THIS WORK Samuel	8 5/8	1848'	1848'	480 sks.
Hersman ADDRESS Box 66, Smithville, WV	7			
ERMIT ISSUED	5 1/2 ,			· · · · ·
	4 1/2	5891 '	י 5891	752 sks.
RILLING COMMENCED , 6/28/82	3	្រា	REP	17120
RILLING CONPLETED 07/11/82	. 2		۲۳ مېټار (۲۰۰ ۳۰	See here
F APPLICABLE: PLUGGING OF DRY HOLE ON ONTINUOUS PROGRESSION FROM DRILLING OR	Liners		VPR 7 - 19	83
EWORKING VERBAL PERMISSION OBTAINED	used	4	AND AND AN	OF MINES
EOLOGICAL TARGET FORMATION Marcellus Shale			<u>h 5900</u>	fee
Much of completed well 5960 feet F	otary <u>xx</u>	_/ Cable	Tools	
Water strata depth: Fresh 42 feet;	Salt 107	6 feet		
ICC: ICC: ICC: ICC:				

Producing formation Devonian Shale 200 Pay zone depth 5184-5910 feet Gas: Initial open flow 800 Mcf/d Oil: Initial open flow 200 Bb1/d Final open flow Mcf/d Final open flow____ Bb1/d Time of open flow between initial and final tests hours Static rock pressure 965 ____psig(surface measurement) after 24 hours shut in (If applicable due to multiple completion --) Second producing formation Pay zone depth feet Gas: Initial open flow Oil: Initial open flow Mcf/d Bb1/d Mcf/d Oil: Final open flow Final open flow Bb1/d

Time of open flow between initial and final tests _____ hours Static rock pressure _____ psig (surface measurement) after _____ hours shut in FORM IV-35

4708505628

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

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WELL ODERWOR'S INTORI

Frac job completed September 30, 1982, SOLOVA EMILITY FANILITY

WELL LOG									
FORMATION COLOR HARD OR SOFT	TOP FEET	HU AXX TOLD	including indication of all fresh and salt water, coal, oil and gas						
	الأفرداناني.	Ocurey.	Distriction of the						
K.BG.L.	00	10							
Sand, shale, red rock	10 1990	1990, 2073	1076' salt water						
Sand, shale	2073	2173	101 Miles Miles Miles David						
Weir Sand, shale	2173	2240 22359	ALLISS P.O. Ton 26, Bridgen						
Sunbury Shalë: 1 nr basil e	2359	2371							
Sand, shale									
Gantz	SIL 2474	2490	EL'DRENS P.A. ROW 26, Bridger						
Sand, shale 0ε	2490		UTANA CRAER ALECCH BLIZZED						
Sand, shale 300 8000 in	2502	2530	IFDERIS V35 Westwieu Dr., Bell						
~~ 50 · · · · · · · · · · · · · · · · · ·	- 2554	11 2618: Jack	MILVER DIGTS CHELS MARTIN						
Sand, shale Gordon Stray	<u>\</u> 2618 2640 [⊥]	2640 2652	2DLES 25 Care Shore R.						
Sand, shale	2652		OTT THE CASE THE FOR THE						
Gordon Sand, shale	<u>7-2661</u> 	~ 2680 3279 (11) i	ANT WELL PROFESSA						
· Huron Shale	13279	4404	The second s						
5091' Sugar	4404	4804							
Angola Rhinestreet	<u>4804</u> 5128	5128 5626	DAMENTER CONTRACTOR 6/23/0						
Sonyea	5626		V. IV. COLUMN CONTRACTOR						
Genessee Marcellus'Shale	5739 5833	5833 5926 T.D.	CONTRACTOR AND						
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ANIMA CHIMIN CARE OF AN INCOMENT	22.		NO.						
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XX / (Ctble Teols'	it Rotary		Depth is familleted well						
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			LOEN HLIN DATA						
	(Attach-sepa	rate sheets	as necessary)						
Interativers (Elew 200 Ebi/d		100 <u>8</u>							
העווא כסטו ושכיז ביווים	Petrol	eum Develorm	nt Corporation						
morali ILILI	Laus JeWell: C	perator /							
al sum crucal de reale (canar									
	a a su a	- Le LEK							
		<u>ril 4, 1983</u>							
Hayeb stron Ve		ار و چه نهاد سار به در د در مرسو همینونون .							
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Note: Regulation 2:02(i) prov	rides as foll	OW8;	S IERI						

Note: Regulation 2.02(i) provides as follows; "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including writ, encountered in the drilling of a well."

4708505645



IV-35 (Rev 8-81)

. 4 copies

State of Mest Airginia Vepartment of Mines Gil und Gas Sivizion

Nate <u>August 19, 1982</u> Operator's 1-C Well No.

Farm Everett Mason API No. <u>47 - 085 - 5645</u>

WELL OPERATOR'S REPORT

OF DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WFIL TYPE: Oil X /. Gas X / Liquid Injection / Waste Disposal / (If "Gas," Production X / Underground Storage / Deep / Shallow /). IOCATION: Elevation: 950'GL Watershed Bonds Creek District: Grant . County Ritchie Quadrangle Ellensboro

Kober Oil, Inc. -COMPANY Cement ADDRESS Route 1 - Box 51A, Cairo, WV Used in Left fill up A Casing 26337 DESIGNATED AGENT Mike Strickland Tubing Drilling in Well Qu. ft. ADDRESS Rt. 1, Box 51A. Cairo, WV 26337 Size 20-16 SURFACE OWNER _ Everett Mason ____ Cond. ADDRESS Linn, West Virginia . <u>330'</u> \$ 330 \$ 3 to surfac MINERAL RIGHTS OWNER Everett Mason 13 -17 9 5/8 to sur-. ADDRESS Linn, West Virginia 330 330. 8 5/8 <u>- face</u> OIL AND GAS INSPECTOR FOR THIS WORK Doe · · · · · , 7 ADDRESSRt. 1, Box 65, Sandridge, Mase 5.1/2 WV PERMIT ISSUED May 11. 1982 4450 1725 KB 4450 4 1/2 DRILLING COMMENCED June 10, 1982 3 June 13, 1982 DRILLI ING COMPLETED 2. IT APPLICABLE: FL GING OF DRY HOLE ON, CONTINUOUS PROGRESSION REAL DRILLING OR Liners REWORKING. . VERBAL PERMISSION OBTAIN D used \$ 10 ON GEOLOGICAL TARGET FORMATION * Ohio Shale Depth 4514 feet Depth of completed well 4514 TD feet Rotary X Cable Tools feet; Salt Water strata depth: Fresh feet Coal seam depths: Pittsburgh Coal Is coal being mined in the area? OPEN FLOW DATA Producing formation Ohio Shale Pay zone depth 3609 feet Mcf/d Oiling Initial open flow Bbl/d Gas: Initial open flow 500 Final open flow 175 Mcf/d · Final open flow · Bbl/d Time of open flow between initial and final tests _____ hours 1200 psig(surface measurement) after 24 hours shut in Static rock pressure (If applicable due to multiple completion --) . Pay zone depth * Second producing formation feet Mcf/d Oil: Initial open flow Bb1/J Gas: Initial open flow Final open flow Mcf/d Oil: Final open flow____ Bb1/d Time of open flow between initial and final tests hours Static rock pressure _psig(surface measurement) after_____hours shut in

(Continue on reverse side)

FORM IV-35 (REVERSE)

4708505645

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DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, EIC.

Perforation Intervals - 3604 - 3614 'KB (40 holes)

Stress frac 10 foot. Nitrogen frac 1,000,000 cubic feet

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FORMATION COLOR HARD OR SOFT	TOP FEET	BOITIOM FEET	
			and salt water, coal, oil and gas
Unconsolidated and			
gravel & clay	0	185	Continue and control of several
Waynesburg Sand	185	290 522	المعدوم المالي ويتحدد ومراكبة ومعادية ومعادية من محمد ومدينة مع من محمد ومدينة مع المالية المحمد مع م المحمد المحمد المحمد المحمد ومن المحمد ومحمد المحمد المحمد المحمد المحمد المحمد المحمد المحمد المحمد المحمد الم
Pittsburgh Coal Murphey Sand	806	835	and the second second second second second
First Cow Run	953	962	A State of the Barrier of the State of the S
Dunkard Sand	1050	1080	CHART AND LAST IN THE TALK
Horseneck Sand Second Cow Run Sand	1301 ⁴⁴ 1398	1361 1423	ALEN DUZENT STUTT
First Salt Sand	1608	50	
Second Salt Sand	1683 ,	1 1 20	Little X Constant States and State
Third Salt Sand	1804 · · · 1866 · · ·		And the price same independently
Maxton Sand Greenbrier Limestone	1910	1902 1923	
Big Injun Sand	1956	2046	
Berea Sandstone	2526	2534	
Ohio Shale	2534	4514	AT WEATER.
Total Depth		- 4514 KB	and the second sec
		• •	to a second contractor a contractor
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	Date:		
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Note: Regulation 2.02(i) prov	ides as foll well log	008: hall merm -	A REAL PROPERTY OF THE REAL PR

detailed geological record of all formations, including unit, encountered in the drilling of a well."

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION 4708505755 OFFICE OF OIL AND GAS

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Department, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name:	Hissem-	Ball		2	_Opera	ator We	ell No.;_	1				
LOCATION:					Qua	adrangle	Elle	nborc	7.5			
LOUATION.		Grant				unty:	Ritc	hie				FD
	District		5		_	•			NΔ	0		& Gas
		39.25814						Min.		Sec.	OCT 19	2022
	Longitude	e: -81.080	Feet	West of	INA	Deg	. <u>NA</u>	Min	NA	Sec.		
Well Type: C	DIL <u>×</u>	_ GAS <u>X</u>				C.					WV Depar Environmenta	Iment of Protection
Company	Haught I	Energy Co	rporation	Coal O	perato	r NA						
1 2	12864 Stat	unton TPKE		or Own	er							
	Smithville,	WV 26178										
				Coal C	perato	or NA						
Agent	Brian Ha	aught		or Own	er							
Permit Issue	ed Date	6-17-202	1			-						
					FFID/							
STATE OF W County of Ritch		INIA, ss:		~							•	
Brian Haught		and	Mike Goff				bein	ig first	duly sw	orn accordi	ing to law depose	
and say that th	ey are exp	erienced in th	ne work of	plugging	and filli	ing oil ar	td gas w	elis an	d were en	nployed by I	the above named	
well operator,	and partic	ipated in the	work of pl	udding a	nd filli	na the a	bove we	l say	that said	i work wa	s commenced on	
the 21st	day of	July	, 2022	, and the	well w	vas plug	ged and	l filled	in the foll	owing man	iner:	
700		DOM				PIPE R		=D		LEA	FT	
TYPE		ROM	T(391	-		Bridge Plug				4-1/2" C		
Brine Water Class A Cement Pl	hua	5560 3917	329		Jerr		NA	d don	4-1/2		3/8 tubing - filled in	
Bentonite Gel Spar		3290	134				3" tubing			4-1/2" C		
Class A Cement Pl		1348	966				" Casing			8-5/8" Casi		
Bentonite Gel Spa		960	84(" Casing			8-5/8" Casi	ing (CTS)	
Class A Cement Pl		840	740	0		4-1/2	" Casing			8-5/8" Casi	ing (CTS)	
Bentonite Gel Spa	-	740	240	0		4-1/2	" Casing			8-5/8" Casi	ing (CTS)	
		240	Surfa	ice		4-1/2	" Casing			8-5/8" Casi		
Description	of monume	ent: 7" Casing w	ifh Stamped A	Juminum Sig	nage	20122		ar	nd that the	ew_ork of p	blugging and filling	
said well was o	completed	on the <u>11th</u>	_ day of Au	Igust	0	= 29 22						
A weak for which a w	deeconorfo	softh not	13		E	J			5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	OFFICIAL SEAL	~~
And further	deponents	i saith noit.			1	1			10.5	A CT	NOTARY PUBLIC	{
			Judio	al 2	all	!			13,000		TE OF WEST VIRGINIA Hannah M Weiford	{
Sworn and	subscribe l	before me thi	s <u>5</u> d	lay of _O	ud	per	, 20 <u>7</u>	2		Му Сотл	PO Box 22 Smithville, WV 26178 nission Expires October 18, 20	23
My commissio	n expires:_	10/18/20	23		_	tamo	hMV Notary F	July Public	L			
Affidavit reviev	ved by the	Office of Oil	and Gas: _	itephen	Мссо	y Digitally sig Date: 2022.	•		Title:	WV Oil	and Gas Inspe	ector



IV-35 (Rev 8-81)

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State of Mest Airginia Vepartment of Alines Gil und Cas Nivision

Date December 8, 19	82	2	
Verator's Vell No. ONE (#1		:	
arm HISSEM - BALL	•	• ·	· .
PI No. 47- '085 -		5	755

WELL OPERATOR'S REPORT

OF DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil x / Gas x / Liquid Injection / Waste Disposal / (If "Gas," Production x / Underground Storage / Deep / Shallow /

LOCATION	: Elevation:	8051	Watersh	ed <u>Hus</u>	HERS RUN-	
ية مير ميروند . وفي في المريون	District:	Grant	County_	Ritchie	Quadrangle	Ellenboro 7.5'
			1	•	······································	

COMPANY PANTHER FUEL COMPANY ADDRESS P. O. Box 850, Bridgeport, WV Cement 26330 Caşing Used in Ieft . fill up DESIGNATED AGENT DONNALLY VILLERS Tubing Drilling in Well Cu. ft. ADDRESS P. 0; Box 647, Weston, WV 26452 Size SURFACE OWNER Claude C. Hissem 20-16 Cond. ADDRESS Box 263, Ellenboro, WV 26346 13-10" MINERAL RIGHTS OWNER C. C. Hissem 9 5/8 ADDRESS Box 263, Ellenboro, WV 26346 8 5/8 1,010 1,010 surfac to OIL AND GAS INSPECTOR FOR THIS WORK Samuel N. 7 Emithville, WV ADDRESS Hersman 26178 5 1/2 PERMIT ISSUED July 6, 1982 4 1/2- 1 5,560 600 sacks DRILLING COMMENCED September 29, 1982 3 DRILLING COMPLETED October 6, 1982 2 PLUGGING OF DRY HOLE ON IF APPLICABLE: CONTINUOUS PROGRESSION FROM DRILLING OR Liners REWORKING. VERBAL PERMISSION OBTAINED used ON

 GEOLOGICAL TARGET FORMATION
 Marcellus
 Depth 5,950
 feet

 Depth of completed well 5,580
 feet Rotary x / Cable Tools

 Water strata depth:
 Fresh
 feet; Salt
 feet

 Coal seam depths;
 Is coal being mined in the area?
 is coal being mined in the area?

OPEN FLOW DATA 5,150 to Producing formation Hamilton Shale Pay zone depth 5,580 feet Oil: Initial open flow Initial open flow show Mcf/d -0- ,Bb1/d Final open flow 500 Mcf/d Final open flow _0_ · Bb1/d Time of open flow between initial and final tests 7 72 hours Static rock pressure 1.450 psig(surface.measurement) after 4 hours shut in (If applicable due to multiple completion --) 950 to Second producing formation Brallier Shale Pay zone depth 4,200 feet Initial open flow Mcf/d Oil; Initial open flow Show Bbl/d Gas: Show

Final open flow <u>300</u> Mcf/d Oil: Final open flow <u>Show Bbl/d</u> Time of open flow between initial and final tests <u>72</u> hours Static rock pressure <u>650</u> psig(surface measurement) after 4 hours shut in

(Continue on reverse side)

4708505755 b

FUM IV-35 (PEVERSE)

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Mak - Martin There

DETAILS OF PERFORATED, INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC nadars ju 118-13 1.44

(1. Halliburton (1511 1.018,000 1.1 N2 ? per, stage Seven (7) High Volume

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HELL OPERATING STREET

190 DINITIAN AND THE PROVIDE STIMULTS ON THE PROVESTICAL CANAL

malitude mi biunti (v eco) ((0) maganetic iogini touto (1 (1 (0))) V LEADTREE SERVICE

FORMATION COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	. <u>REMARKS</u> Including indication of all frest and salt water, coal, oil and gas
Big. Lime			1,820	
Big Injun		1,830.	1,870	Oil and Gas
Berea Cap	in Evel pri	2,232	1	
Gordon-Sand	antina pa	-2,445	2,470	Gas
Fifth Sand		⁽¹⁾ 2,635	2,645	11 Gas martine weeks
Brallier Sh	a second a second se	2,860	. 075	GARGE Oil and Gas
Harrell Sha	ł <u>1</u>	- 4,075	5,128	Gas
Hamilton Sh	ale	- 5,120 (asa 5,580 a	COS S Gas 192 The American Street
		1. J. J. J. J.		Alle Aller State and the state
and an and the second		3. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		a production to a constant of the
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			DESELUTION	(1946), 2020 A.
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	120 V	_ دوروند : متنال	067 - 1	er batalanza ingen and
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Shops of at in	state pared from	· · ·	· · · · · · · · · · · · · · · · · · ·	and a double a second second

132 2 Adria Capita 5 280 1 South an Shille . This is a constant of the burner when and the constant of a constant of the will now fuire (Attach separate sheets as necessary) TEALINE EJEAN JANT LASTIN ゴモム

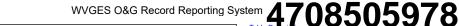
MARY SA 18 Internet Contents af a PAND

- Andria Statut whit will be und faiding . Ile, Date W 195 90 - 1 2 a tot Jant Ismia trin

250 600

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Note: Regulation 2.02(i) provides as follows: <u>с</u> "The term 'log' or 'well log' shall mean a systematic Actailed geological record of all formations, including wal, encountered in the drilling of a well.



VGES	Select County:	(085) Ritchie	~	Select datatypes: 🗌 (Check All)	
Y UNDERLIES IT ALL	Enter Permit #:	5978		Location	Production	Plugging
"Pipeline"	Get Data	Reset		 Owner/Completion Pay/Show/Water 	Stratigraphy Logs	Sample Btm Hole Loc



WV Geological & Economic Survey:

Well: County = 085 Permit = 5978 Link to all digital records

for well

Report Time: Wednesday, April 03, 2024 8:45:13 AM

"Pipeline-Plus

Location Information: View Map

API COUNTY PERMIT TAX_DISTRICT QUAD_75 QUAD_15 LAT_DD LON_DD UTME UTMN 4708505978 Ritchie 5978 Clay Ellenboro St. Marys 39.260276 -81.076941 493362 4345663.1

There is no Bottom Hole Location data for this well

Owner Information:

API CMP_DT SUFFIX 4708505978 -/-/- Original
 SUFFIX
 STATUS
 SURFACE_OWNER
 WELL_NUM
 CO_NUM
 LEASE
 LEASE_NUM
 MINERAL_OWN
 OPERATOR_AT_COMPLETION
 PROP_VD
 PROP_TRGT_FM
 TFM_EST_PR

 Original Loc
 Completed
 Westvaco
 EPI-1
 Highland Resources, Inc.
 Highland Resources, Inc.

Completion Information:

 API
 CMP_DT
 SPUD_DT
 ELEV
 DATUM

 4708505978
 -/-/
 -/-/
 825
 Ground L
 FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT O_E unclassified not available unknown unknown 825 Ground Level Gooseneck unclassified 0 0 0

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf) * 2023 data for H6A wells only. Other wells are incomplete at this time.

	N F 1	FRODUCING_OF LINKION	FILD_ILAN	ANN_0A0	3711	1 60		AFIN	1010	3014	305	700	OL.	001	1404	DOW	L 1
4	708505978	Highland Resources, Inc.	1984	6,529	568	504	551	514	836	438	402	704	647	477	316	572	
4	708505978	Highland School, The	1987	420	0	27	0	0	0	0	0	0	45	62	185	101	
4	708505978	Highland School, The	1988	2,171	31	98	123	160	180	216	318	320	277	165	192	91	
4	708505978	Highland Resources, Inc.	1999	88	21	19	20	0	16	2	1	2	2	2	2	1	
4	708505978	Highland Resources, Inc.	1999	1,064	91	120	85	101	96	86	106	102	105	82	52	38	
4	708505978	Highland Resources, Inc.	1999	4	1	2	1	0	0	0	0	0	0	0	0	0	
4	708505978	Highland School, The	2001	22	1	0	1	0	1	0	7	0	0	3	9	0	
4	708505978	Mountain State Well Tending	2003	44	0	4	3	2	5	4	6	4	7	6	1	2	
		Mountain State Well Tending	2013	339	15	58	32	44	25	49	17	20	23	20	13	23	
4	708505978	Mountain State Well Tending	2014	289	18	39	23	14	26	16	6	1	47	37	34	28	
4	708505978	Mountain State Well Tending	2016	338	34	21	32	14	33	20	26	38	39	39	29	13	
4	708505978	Mountain State Well Tending	2018	85	0	0	0	7	0	0	0	23	23	0	25	7	
4	708505978	Mountain State Well Tending	2019	60	5	5	5	5	5	5	5	5	5	5	5	5	
4	708505978	Mountain State Well Tending	2020	78	23	12	10	9	8	4	3	3	3	3	0	0	
4	708505978	Mountain State Well Tending	2021	0	0	0	0	0	0	0	0	0	0	0	0	0	

Production	Oil Information: (Volume	es in Bbl) '	** some o	pera	tors i	nay ł	nave r	report	ted N	IGLι	Inder	Oil	* 20	23 d	ata fo	r H6A wells only.	Othe	er we	ells ar	re inc	comple	ete at f	this t	time.
API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NO\	V DCM]								
4708505978	Highland Resources, Inc.	1984	584	50	48	93	97	0	94	18	0	92	0	(0 92									
4708505978	Highland School, The	1987	106	0	57	0	0	0	0	0	0	49	0	(0 0									
4708505978	Highland School, The	1988	162	0	0	37	31	0	0	51	0	43	0	(0 0									
4708505978	Highland Resources, Inc.	1999	5	5	0	0	0	0	0	0	0	0	0	(0 0									
4708505978	Highland Resources, Inc.	1999	0	0	0	0	0	0	0	0	0	0	0	(0 0									
4708505978	Highland Resources, Inc.	1999	0	0	0	0	0	0	0	0	0	0	0	(0 0									
4708505978	Highland School, The	2001	0	0	0	0	0	0	0	0	0	0	0	(0 0									
4708505978	Mountain State Well Tending	2003	0	0	0	0	0	0	0	0	0	0	0	(0 0									
4708505978	Mountain State Well Tending	2013	12	0	0	12	0	0	0	0	0	0	0	(0 0									
4708505978	Mountain State Well Tending	2014	10	0	0	10	0	0	0	0	0	0	0	(0 0									
4708505978	Mountain State Well Tending	2016	11							11														
4708505978	Mountain State Well Tending	2018	33	21	0	0	0	12	0	0	0	0	0	(0 0									
4708505978	Mountain State Well Tending	2019	0	0	0	0	0	0	0	0	0	0	0	(0 0									
4708505978	Mountain State Well Tending	2020	33	21	0	0	0	12	0	0	0	0	0	(0 0									
4708505978	Mountain State Well Tending	2021	0	0	0	0	0	0	0	0	0	0	0	(0 0									

Production	NGL Information: (Volun	nes in Bbl)	** some	opera	ators	may	have	repo	rted I	NGL	unde	r Oil	* 2	023	data	for H6A wells only. Other wells are incomplete at this time.
API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ост	NO	V DC	CM .
4708505978	Mountain State Well Tending	2013	- 0	0	0	0	0	0	0	0	0	0	0		0	0
4708505978	Mountain State Well Tending	2014	0	0	0	0	0	0	0	0	0	0	0		0	0
4708505978	Mountain State Well Tending	2016	0													
4708505978	Mountain State Well Tending	2018	0	0	0	0	0	0	0	0	0	0	0		0	0
4708505978	Mountain State Well Tending	2019	0	0	0	0	0	0	0	0	0	0	0		0	0
4708505978	Mountain State Well Tending	2020	0	0	0	0	0	0	0	0	0	0	0		0	0
4708505978	Mountain State Well Tending	2021	0	0	0	0	0	0	0	0	0	0	0		0	0

Production	Water Information: (Volu	umes in Gal	lons) * 2	023	data	for H	6A w	ells c	only.	Oth	er we	ells a	re in	com	plete	at this tim
API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ост	NOV	DCM	
4708505978	Mountain State Well Tending	2016	_ c	1												
4708505978	Mountain State Well Tending	2018	C	0	0	0	0	0	0	0	0	0	0	0	0	
4708505978	Mountain State Well Tending	2019	C	0	0	0	0	0	0	0	0	0	0	0	0	
4708505978	Mountain State Well Tending	2020	C	0	0	0	0	0	0	0	0	0	0	0	0	
4708505978	Mountain State Well Tending	2021	C	0	0	0	0	0	0	0	0	0	0	0	0]

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4708505978	Original Loc	Conemaugh rdbds (ud)	Geolog	830	Reasonable	30	Reasonable	825	Ground Level
4708505978	Original Loc	Allegheny coal (udf)	Geolog	1192	Reasonable	2	Reasonable	825	Ground Leve
4708505978	Original Loc	Pottsville coal (ud)	Geolog	1300	Reasonable	2	Reasonable	825	Ground Leve
4708505978	Original Loc	Pottsville coal (ud)	Geolog	1509	Reasonable	3	Reasonable	825	Ground Leve
4708505978	Original Loc	Miss/Penn boundary	Geolog	1783				825	Ground Level
4708505978	Original Loc	Big Lime	Geolog	1783	Reasonable	0	Reasonable	825	Ground Leve
4708505978	Original Loc	Berea Ss	Electric Log	2358	Reasonable	4	Reasonable	835	Kelly Bushing
4708505978	Original Loc	UDev undf:Ber/LoHURN	Electric Log	2362	Reasonable	1095	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Lower Huron	Electric Log	3457	Reasonable	1149	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Java Fm	Electric Log	4606	Reasonable	222	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Angola Sh Mbr	Electric Log	4828	Reasonable	288	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Rhinestreet Sh	Electric Log	5116	Reasonable	493	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Cashaqua Sh Mbr	Electric Log	5609	Reasonable	136	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Middlesex Sh	Electric Log	5745	Reasonable	38	Reasonable	835	Kelly Bushing
4708505978	Original Loc	West River Sh Mbr	Electric Log	5783	Reasonable	62	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Geneseo Sh Mbr	Electric Log	5845	Reasonable	0	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Lo Mahantango	Electric Log	5875	Reasonable	5	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Marcellus Fm	Electric Log	5880	Reasonable	27	Reasonable	835	Kelly Bushing
4708505978	Original Loc	Onondaga Ls	Electric Log	5907	Reasonable	0	Reasonable	835	Kelly Bushing

Wireline (E-Log) Information:

* There is no Scanned/Raster Log data for this well

* There is no Digitized/LAS Log data for this well

* There is no Scanned or Digital Logs available for download

There is no Plugging data for this well



Sample Information: API CUT1_TOP CUT1_BOT CUT2_TOP CUT2_BOT CORE1_TOP CORE1_BOT FM1_TOP FM1_BOT CORE2_TOP CORE2_BOT FM2_TOP FM2_BOT SMPL THN_SEC1 SCAN1 SLAB1 PERM1 THN_SEC 4708505978 240 5930

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4708505979

IV-35				Data T		997
(Rev 8-81)				Operato	r's 7 [#] 2-	
D	FCEIVEN	Sinte of Mes	st Wirgini			
		Department 1	~		Alcret	
(A Q	OCT 27 1987	Gil und Gas	Division	API NO.	47 - 08	P5 - 5979
	IVISION OF OIL & GAS PARTMENT OF ENEF 39	WELL OPERATOR OF	'S REPORT			
	DRILLING, FRACTUR		ULATING, C	OR PHYSICAL	CHANGE	
					-	
WELL TYPE:	Oil <u>X</u> / Gas <u>X</u> / (If "Gas," Producti	ion/ Undergro	und Storag	ge/ Deep	l/ p/ Sha	110w/)
LOCATION:	Elevation: <u>852.5</u>			ļ	••••••••••••••••••••••••••••••••••••••	
	District: <u>CLAN</u>	County_////	41.2	Quadrangle	ELLEN,	80R0 7.5
	·					·
	CHUND LESCRES, I					M
	ack 56 ELENBIN			1		Cement
	NGENT T. STEPHEN LA	•	Casing	Used in	Left	fill up
ADDRESS .5			Tubing	Drilling	in Well	Cu. ft.
	NER GECLEE P. Murit	441	Size 20-16			
	CENBLEC, LUV		Cord			
	GITS OWNER SHILL	······	13-10"	350	352	70 Ser=
ADDRESS	GIIS CHILER		9 5/8			
		L'OMI	8 5/8	2100	2100	4505r.5
	S INSPECTOR FOR THIS	WORK .	7			
	$\frac{\text{ADDRESS}}{\text{SUED} / 1 - \overline{22}}$	· · · · · · · · · · · · · · · · · · ·	5 1/2			
			4 1/2	4050	6250	251765 TU 12700
	DOMMENCED 12-77.		3	_		
	DOMPLETED <u>/- /223</u>		2	4652	+850	
	VBLE: PLUGGING OF DR 5 PROGRESSION FROM DR		Liners			
REWORKING.	VERBAL PERMISSION		used		<u> </u>	
ON			L		I	
GEOLOGICAI	L TARGET FORMATION	LENTANCY LIMEST	the	Dep	th 669	5_feet
	i of completed well <u>6</u>					•
	r strata depth: Fres					
''. Coal	seam depths:		_ Is coal	being min	ed in the	e area? <u>10</u>
OPEN FLOW	DATA	rtes		• •		
Produ	ucing formation <u>Size</u>	CAREY ADALITAN	Pa	v zone dep	11194. th 2194	feet
Gas:	Initial open flow	71 Mcf/d	Oil: In	itial open	flow Z	
	Final open flow (
		low between ini				
Stat	ic rock pressure 1500					4
	applicable due to mul				- <u></u> _	-
-	nd producing formatio	- •		w zone der	1 +11	- Cont
Gase	Initial open flow_	hef la	rc	itial om	flar	1(\'L
·····•	Final open flow	kof/a	011. 1	inal oron 4	·	
Stat		low between ini				
Stat	ic rock pressure	paralentiac	e neasure	nent) atte	·	urs simt in

(Continue on reverse vide)

FORM IV-35 (REVERSE)

4708505979

DETAILS OF PERFORMED INTERVALS, FRACTURING OR STIMULATOR, PHYSICAL CHANGE, ETC. 4994 TO 4230' 395,000 SER NITCHEN, 13.25 Rids Co-2 4230 TO 3610 425,000 SER NITCHEN, 2016 CC-2 3610 TO 2694 455,000 SER NITCHEN 27 Red Co-2

87 1-10(25 . 39 ENTAY

FORMATION COLOR HARD OR SOFT	':OP FEET	BOTTOM FEET	<u>REMARKS</u> Including indication of all fresh and salt water, coal, oil and gas
5.140	200	230	FRESH WATER
DHALL SILTSRIPL	230	1350	• ت
SALT SHAD	1352	130	
Siline	1322	licis	
200 Sher Shan	1600	1620	
3 Ro Sair Shad	1710	54r1	A BRANSTER
John John Solar D	1270	1960	SHEN CH / CONTENT
lizic	2010	2.460	OCT 27 1987
STIL SHAND	x 40	2660	
UPite Specence 1	3320	5352	DEPARTMENT OF ENERGY
Komen Speechlery	3470	3290	DEPARTMENT OF ENERGY
150 BALLERIA	3970	3190	Stais ale
Jus Buicicul	4100	4150	
Brusci	4600	4620	
Eric	5250	5:75	•
MARCELLUS	5820	5990	
Т:Э.	6095		· · ·
÷			

WELL LOG

(Attach separate sheets as necessary)

By: Date:

Note: Regulation 2.02(i) provides as follows: "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including """, encountered in the drilling of a well."

TO BREED	ALL ALLAND	4708	5060	19
TV-35 Sev 8-81) RECEIVED JUL 9 - 1985	3			
IV-35	LITER DOLL	Date	July 3	, 1985
JUL 9 - 1985 OIL & GAS DIVISION DEPT. OF MINES Department	+ 28:	Operato Well No	or's Cross :	#1
OIL & GAS DIVINES	a confine	Farm	Cross	
DEPI. OF When Bepariment of Bil and Gas	Tainines .	API NO.	47 - 08	5 - 603
	Ender			
WELL OPERATOR	'S REPORT			
OF DRILLING, FRACTURING AND/OR STIM	ULATING, C	R PHYSICA	L CHANGE	
WELL TYPE: Oil \underline{Z} / Gas X / Liquid Injection (If "Gas," Production X / Undergro	und Storag	ge/ Dee	1/ p/ Sha	ullow_X/)
LOCATION: Elevation: 895 Watershed	Hushers Ru	n		
District: Grant County Ritch	ie	Quadrangl	e Ellenbor	<u>co 7.5</u>
20MPANY Wayman W. Buchanan 444 Petroleum Commerce Bldg.				
ADDRESS San Antonio, TX 78205	Casing	Used in	Left	fill up
DESIGNATED AGENT David Smith Box 207C, Red House, WV 25168	Tubing	Drilling	in Well	Cu. ft.
JUDRESS	Size			
SURFACE OWNER Ray Cross 3246 Cliffside Dr.	20-16 Cond.			
DDRESS <u>Cincinnati</u> , Ohio 45239	13-10"			
INFRAL RIGHTS OWNER same as above	9 5/8		350	Circ.
DDRESS	8 5/8			
IL AND GAS INSPECTOR FOR THIS WORK Samuel	7		2000	Circ.
ershman ADDRESS Smithville, WV 26178	5 1/2		2000	
PERMIT ISSUED 11/18/82	4 1/2		4700	470 sks.
DRILLING COMMENCED 11-26-82	3		1100	
RILLING COMPLETED 12-31-82	2			
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED UN	Liners used			
GEOLOGICAL TARGET FORMATION Devonian Shale		Dep	th4600	fee
Depth of completed well 4980 feet	Rotary X	/ Cable	Tools_	
Water strata depth: Fresh 150 feet;	Salt 1800	feet		in terms
Coal seam depths: none	Is coal	being mine	ed in the	area? no
DPEN FLOW DATA				
Producing formation Devonian Shale	Dau	zone den	-h 1005_	3376 foo
Gas: Initial open flow Mcf/d				
Final open flow 30 Mcf/d				
Time of open flow between init				
Static rock pressure 220 psig (surface				
(If applicable due to multiple completion		ent, arte	<u>24</u> nou	rs snut 1
I applicable are to malliple completion		and done	-h	
	Pau	zone dept		the second s
Second producing formation none		+ 1	£1	
Second producing formation none Gas: Initial open flow Mcf/d	Oil: Ini			
Second producing formation none Gas: Initial open flow Mcf/d Final open flow Mcf/d	Oil: Ini Oil: Fin	al open fi	low	Bbl/d
Second producing formation none Gas: Initial open flow Mcf/d	Oil: Ini Oil: Fin ial and fi	al open fi nal tests	lowho	Bbl/d

PIT

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FORM IV-35 (REVERSE)

4708506019

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. Perforated 4523' - 4885', 34 holes, treated w/22,000# 20/40 sand, used 90 quality foam, total of 92 bbls fluid, 689,000 SCF nitrogen. Perforated 4007' - 4334', 29 holes, treated w/22,500# 20/40 sand, total of 94 bbls fluid, 674,000 SCF nitrogen. Perforated 3376' - 3891', 36 holes, treated w/22,500# 20/40 sand, total of 91 bbls fluid, 536,000 SCF nitrogen.

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Red rock & shale	0	372	
Sand	372	415	
Shale	415	675	
Sand	675	752	
Shale	752	896	
Sand	896	934	
Shale	934	1290	
Sand	1290	1315	and an and the second second second
Shale	1315	1440	
Sand	1440	1512	
Shale	1512	1600	
Sand	1600	1650	
Shale	1650	1674	
Big Lime	1674	1779	
Big Injun	1779	1804	
Break	1804	1816	
Squaw	1816	1839	
Shale	1839	2185	
Coffee Shale	2185	2208	a second a second s
Berea	2208	2227	States and the state of the state of the
Shale	2227	4268	The state of the second state of the
Huron Shale	4268	4567	
Devonian Shale	4567	4980	

WELL LOG

(Attach separate sheets as necessary)

and a manager

WAYMAN W. BUCHANAN Well Operator		
By: Malan	7	
Date: July 3, 1985	/	

Note:	Regulation 2.02(i) provides as follows:
	"The term 'log' or 'well log' shall mean a systematic
	detailed geological record of all formations, including
	coal, encountered in the drilling of a well."

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FEB 73 1983 OIL AND GAS DIVISION WY DEPARTMENT OF MINES

Received

IV-35 (Rev 8-81)

> State of West Airginia Bepartment of Mines Gil and Gas Bivision

ARTMENT		· ·	
Date	Januar	y 10,	1983
Operat	or's	•	
Well 1	10. #	2	
Farm_	Smith		
API N	5. 47 –	085	- 602
•		• •	

WELL OPERATOR'S REPORT OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil XX / Gas / Liquid Injection / Waste Disposal (If "Gas," Production / Underground Storage Deep Shallo IOCATION: Elevation: 930' Watershed Hushers Run

County Ritchie Quadrangle Ellenboro District: Grant

COMPANY Petroleum Development Corporation	1	r	<u> </u>	Cement
ADDRESS P.O. Box.26, Bridgeport, WV 26330	Casing	Used in	Left .	fill up
DESIGNATED AGENT John R. Mitchell	Tubing	Drilling	în Well	Cu. ft.
ADDRESS P.O. Box 26. Bridgeport. WV 26330	Size			
SURFACE OWNER Alfred Blizzard et al	20-16 Cond.			
ADDRESS 735 Westview Dr., Belpre, OH 45714	13-10*	30	30	Cement to surface
MINERAL RIGHIS OWNER Maxim & Foster Smith	9.5/8			
ADDRESS 2-G Cape Shoren Dr. N., Cape Canavaral, FL 23920	8 5/8	·		
"OIL AND GAS INSPECTOR FOR THIS WORK Samuel	7-5/8	1104	1104	,400 sks.
• Hersman ADDRESSF.O. Box 66, Smithville, WW 26178	5 1/2 -	•		
PERMIT ISSUED 11/18/82	4 1/2 .	4992	4992	315 sks.
DRILLING COMMENCED November 26, 1982	3			
DRILLING COMPLETED December 3, 1982	2			
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR	Liners			
REWORKING. VERBAL PERMISSION OBTAINED	used			114

feet feet Rotary XX / Cable Tools Depth of completed well · 5060 feet Water strata depth: Fresh . feet; Salt Coal seam depths: None Is coal being mined in the area? Not

OPEN FLOW DATA

Producing formation _____ Devonian Shale Pay zone depth 2499-4962 : feet 3,41 Gas: Initial open and Mcf/d Oil: Initial open flow Bbl/d Final open flow 39 Final open flow Mcf/d Bb1/d Time of open flow between initial and final tests hours hours shut in (If applicable due to multiple completion ---)

 \mathbf{N} Second producing formation_ Pay zone depth feet Gas: Initial open flow Mcf/d Oil: Initial open flow Bb1/d Final open flow Mcf/d Oil: Final open flow . · Bbl/d Time of open flow between initial and final tests hours Static rock pressure _____ psig(surface measurement) after hours shut in

(Continue on revense side)

EPA

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DETAILS OF PERFORATED -INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC Perforations acid: 610,000scf IST STAGE 4004039-4962) 11bbls £13-9 -25(3473-4017) 19tons -500,000scf 8bbls 2ND-STAGE mrr'I 18.5 3RD STAGE 500,000scf 18(2499-2935) tons 17bbls

WELL LOG

· · · · · · · · · · · · · · · · · · ·			A second fill the second of the
	I		REATING .
FORMATION COLOR HARD OR SOFT	TOP FEET	BOITION FEET	and salt water, coal, oil and gas
KB-GL	0150	10	the state of the second states and the secon
sand, shale, Red Rock	10	1808	
Big Lime	1808		
Big Injun	1893	1975	
Squaw	1975	2024	hings have the state of the second
Sand, shale	2024	2118	randrichter aus die her die Staat ander
Weir , the shale of the partition	2110 01:::2192	2192 2350	BUM BORT STAR BANK STAR
Sunbury Shale			gas check @ 3000* 14/10 thru
Berea	53 2377 -	2377 2398 2482 L	1 H_O
Sand, shale	01: 2398	2482 1	PERSONALLE COLLER AND ENTRY ER
Gantz	2482	2528.,	Alter and main have been a first of
Sand, shale CE	2528 -	2741 	s gas check 0-4500 14/10 thru
Huron	2802	4532	an annual state of the state of
Java	4532	4926	^H 2 ⁰
Angola		2,, 5059 TD	CARLEON MULTINATI SALE OF A 1949
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			NOTAD SAFTALLE CALMEDITES OF COMPANY
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	TEI	JELADED .	F. J. M. M. M. S. WERSAG, FRANKLEY
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Well/Operator

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Note: Regulation 2.02(i) provides as follows: "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including """, encountered in the drilling of a well."

4708506054



UC TV-35 (Rev 8-81)

	INST TERMICIPALITY AND INTERNAL
	Date June 7, 1983
ากกับเรื่ม	Operator's Well No. Two(2)
185	Farm McVey
ion 2	API No. 47 - 085 _ 6054

State of Mest Birgin Bepartment of Mines Gil und Cas Bivision

WELL OPERATOR'S REPORT OF DRILLING, FRACTURING AND/CR STIMULATING, OR PHYSICAL CHANGE

	•		. <u> </u>	
WELL TYPE: Oil X / Gas / Liquid Injection (If "Gas," Production X / Undergrou	n/ Wast	e Disposa e / Dee	1/ p / Sha	llow X /)
LOCATION: Elevation: 1,030Watershed				
District: Clay County Ritch				m75r
				<u></u>
	/			· · · · · · · · · · · · · · · · · · ·
COMPANY ' Panther Fuel'Co.	.			
ADDRESS P.O. Box 850, Bridgeport, W.Va. 26330	Casing	Used in	Left '	Cement fill up
DESIGNATED AGENT Dave Harmer	Tubing /	Drilling	in Well	Cu. ft.
ADDRESS P.O. Box 850, Bridgeport, W.Va. 26330	1226 /			
SURFACE OWNER Bennie McVey	20-16 Cord.	\searrow		
ADDRESS Ellenboro, W.Va.	13-10"	. /30		
MINERAL RIGHTS OWNER Bennie McVey let.al.	9'5/8 -	$\langle \cdot \rangle$,
ADDRESS Éllenboro, W.Va.	8 5/8	1,235/	1,235	to surfac
OIL AND GAS INSPECIOR FOR THIS WORK Samuel	i i	×	<i></i> .	
Hersman ADDRESS Smithville, W.Va.	5 1/2			
PERMIT ISSUED	4 1/2	1. 1.	•	1
DRILLING COMMENCED February 17 1983	3		• •	
DRILLING COMPLETED February 22, 983	2			
IF APPLICABLE: PLUCGING OF DRY HOLE ON /	Liners		•• D	. A sugar
REWORKING. VERBAL PERMISSION OBTAINED	used			
ON	.			l
GEOLOGICAL, TARGET FORMATION Marcellus Shale			<u>h 5,990</u>	
. Depth of completed well 3,130 / feet R				
Water strata depth: Fresh 60 feet;	•			. X
Coal seam depths:	Is coal	being mine	ed in the	area?
OPEN FLOW DATA			•	•
Producing formation Brallier Shale	Pay	zone depi	<u>h_3,130</u>)feet
Gas: Initial open flow 1.1 Mcf/d.	Oil: " In	tial open	flow 25	Bbi/d
Final open flow Mcf/d				
Time of open flow between initi				
Static rock pressure 850 palg (aurioca	measuren	ent) after	72 hou	rs shut in
(If applicable due to multiple completion		•	•	
Second producing formation	Pay	zone dept	h	feet
Gas: Initial open flow	Qil: Ini	tial open	flow	Bp1/d
Final open flow Maf/d.				
Time of open flow between initi	al and fi	nal tests	ho	urs
Static rock pressure	messurene	nt) after	hou	rs shut in

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DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, EIC. ALTIN STORY STREET Ward, Value

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ORMATION COLOR HARD OR SOFT	TOP FEEP	BOLLOW FEEL	REMARKS Including indication of all fresh and salt water, coal, oil and gas
	· · · · · · · · · · · · · · · · · · ·		
Big Lime		2,055	
Big Injun	2,075	2,105	Gas
Gantz Sand	2,565	2,595	Gas
Gordon Sand	2,745	2,790	Gas en and set of the set of
Fifth Sand	2,863	. 2,873	Gas
Brallier Shale	2,975	130	Gas & 011
and a second			Natural
	- Artistica		a second again france and the
15.5	and the second	من المعني معتقد مستقدم المعنية من المعنية المعالم المعالية المعالية المعالية المعالية المعالية المعالية المعال المعالية المعالية الم المعالية المعالية الم	
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	By: "	HALL ((MAN >

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Regulation 2.02(1) provides as jollows Note: "The term . Ilog ! on . Well, log is shull mean a systematic detailed guological record of all formations, including worl, encountered in the drilling of a well. ١

API # 47- 85-06137 State of West Virginia DEPARTMENT OF ENERGY Division of Oil and Gas Well Operator's Report of Well Work 08506137 Farm name: REXROAD, ALAH & JOHN Operator Well No.: 1-A LOCATION: Elevation: 850.00 Quadrangle: ELLENBORO District: GRANT County: RITCHIE Latitude: 14700 Feet South of 39 Deg. 17Min. 30 Sec. Longitude 1510 Feet West of 81 Deg. 5 Min. 0 Sec. Company: ENERGEX OIL & GAS CO. P. O. BOX 905 Casing | Used in | Left Cement MARIETTA, OH & Fill Up Tubing | Drilling | in Well|Cu. Ft. Agent: GERALD TOWNSEND Size Inspector: SAMUEL HERSMAN surface Permit Issued: 11 3/4" j 200' 01/03/83 200' 100 sks. Well work Commenced: 01/83 Well work Completed: 01/25/83 Verbal Plugging 8 5/8" İ 1524' 1524 135 sks. Permission granted on:_ Rotary X Cable Total Depth (feet) Rig 840 cu.ft -56994 5722 4 1/2" 5689' 5689' 555 sks. Fresh water depths (ft) 40' Salt water depths (ft) 1700' Is coal being mined in area (Y/N)? N OCT 07 1985 Coal Depths (ft): DIVISION OF OIL & GAS DEPARTMENT OF ENERGY OPEN FLOW DATA Producing formation <u>Dual Completion</u> Pay zone depth (ft)5270-5678 ÷ Gas: Initial open flow <u>--</u> MCF/d Oil: Initial open flow <u>--</u> Bbl/d Final open flow <u>340</u> MCF/d Final open flow <u>none</u> Bbl/d Time of open flow between initial and final tests <u>24</u> Hours Static rock Pressure 1550 psig (surface pressure) after 48 Hours Second producing formationJavaPay zone depth (ft)4685-5162Gas: Initial open flowMCF/d Oil: Initial open flowBbl/dFinal open flowMCF/dFinal open flow Bb1/d Time of open flow between initial and final tests Hours 🛪 Static rock Pressure psig (surface pressure) after Hours

WR-35

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Robert D. Johnson President For: ENERGEX OIL & GAS CO. , fier By: Dater

28-Apr-88

4708506137

22 perfs from 5270 - 5678¹ 10 perfs from 4685 - 5162¹

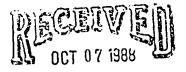
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Nitrogen 2 stage frac with 1500 mcf @ 40 mcf/min.

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DIVISION OF OIL & GAS DEPARTMENT OF ENERGY

Saltwater - 1725'

Sand, Shale, Redrock	0	1700'
Injun Sand	1700'	1790'
Shale	1790'	1830'
Squaw	1830'	1900'
Sand, Shale	1900'	2360'
Berea Sand	2360'	2372'
Sand, Shale	2372'	2650'
Gordon Sand	2650'	2680'
Upper Devonian	2680'	4120'
Alexander	4120*	4130'
Devonian	4130'	5430'
Rhinestreet	5430'	5460'
Middle Devonian	5460'	5530'
Marcellus	5530'	5670'
Shale	5670'	5722'

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IV-35 (Rev 8-81), OIL & GAS DIVISION

DEFT. OF. ! State of Mest Airginia Department of Mines Gil und Gas Division

Date_	Se	pteni	ber '	1, 1	983
Operative Well 1	toŗ'	S	•		
Farm_	Gri	mes			
API N	5. 4	7 -	085	_	6148

WELL OPERATOR'S REPORT

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil X / Gas X / Liquid Injection / Waste Disposal / (If "Gas," Production X / Underground Storage / Deep / Shallow

IOCATION: Elevation: 940 .Watershed Hushers Run

District: Clay. County. Ritchie Quadrangle Ellenboro 7.5

Panther Fuel Co. COMPANY' ADDRESS P.O. Box 850, Bridgeport, W.va. 26330 Cenent Casing Used in *A*eft fill up DESIGNATED AGENT Dave Hamer Tubing Drilling in Well Cu. ft. ADDRESS P.O. Box 850, Bridgeport, W.Va. 26330 Size SURFACE OWNER Grimes Heirs 20-16 Cánd ADDRESS Ellenboro, W.Va. 13-10" MINERAL RIGHTS OWNER Grimes Heirs 9'5/8 Ellenboro, W.Va. ADDRESS 8-5/8 : 1,157 1,157 to surface OIL AND GAS INSPECTOR FOR THIS WORK Samuel 7 · Hersman ADDRESS_Smithville', W.Va. 5 1/2 PERMIT ISSUED' 4 1/2 5;726 650<u>sacks</u> March 23, 1983 DRILLING COMMENCED · (£) 3 March 30, 1983 DRILLING COMPLETED 2 ` IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR Liners REWORKING. VERBAL PERMISSION OBTAINED used ON Marcellus Shale Depth 5,990 GEOLOGICAL TARGET FORMATION feet Depth of completed well 5,784 ! feet Rotary X / · Cable Tools Water strata depth: Fresh 70 feet; Salt_ 900 feet Coal seam depths: Is coal being mined in the area? a OPEN FLOW DATA Producing formation Hamilton Shale Pay zone depth 5,710 feet show Mcf/d Oil: Initial open flow _0_ Gas: Initial open flow Bbl/d ^ Mcf/d Final open flow . 470 Final open flow -0-Bp1/q Time of open flow between initial and final tests 4 hours Static rock pressure 880 'paig (surface measurement) after 72 hours shut in If applicable due to multiple completion--) Second producing formation - Harrell Shale Pay zone depth -4,780 feet Initial open flow show Mct/d Oil: Initial open flow show Gas: Bb1/d 80ئ Final open flow Mcf/d r Oil: Final open flow show Bb1/d Time of open flow between initial and final tests hours Static rock pressure _____paig (surface measurement) after -- hours shut in

- ATTANTS t -

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DETAILS OF PERFORMED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, EIC. 4. stages: Nowsco 750 mscf. of N2 per stage, approximately 40 holes.

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FORMATION COLOR HARD OR SOFT	TOP FEET	BOTICM FEET	«REMARKS Including indication of all fresh and salt water, coul, oil and gas
		1 070	
.Bíg·Lime	1,822	1,870	
Keener Sand	870 1,920	1,912	Gas show
Big Injun	2,122	2,032	Show oil & gas
• Weir Sandy-Shale	2,260	2,220	Show gas
Gordon Sand	2,200	2,550	Show gas
Fifth Sand	2,810	2,820	Show oil & gas
Brallier Shale Top	2,990	••••	
Warren Shale	3,400 =	3,565	Oil & gas
Brallier Shale Bottom		4,050	Oil & gas
'Harrell Shale Top	4,050		Oil & gas
Benson Horizon	4,710	4,780	Gas
Harrell Shale Bottom		5,122	A second s
Hamilton Shale	5,122 .	5,784	Gas
	·····	Laster and the state	and the Carl of A A A A A A A A A A A A A A A A A A
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1 (Panth	er Fuel/Co.	· <i>α</i> /
		NILT /	
	By:	January 7,	, Vice President
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and the second se			
Note: Regulation 2.02(i) pro "The term 'log' or detailed geological re l. encountered in t	'well.log'; cord of all	shall mean a formations,	systematic including

WELL LOGA



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1V-35)	Date FI	12-4 6, 19	27	
(Rev 8-81) TATATATATA			Operator	5 Eki - 7		•
	since of Mesi	Pirgini	n Well Ho.	<u>EK1 - 1</u>		-
OCT 27 1987	Department of	Allines		1. Aleta		•
	Oil und Uns	Division	API No.	47 - 08	5 - 6154-	-
DIVISION OF OIL & GAS DEPARTMENT OF ENERGY						
DECONTRACT OF ENERGY	WELL OPERATOR'	S REFORM				•
DRILLING, FRACTURIN	G AND/OR STINU	LATING, O	R PHYSICAL	CHANGE		
WELL TYPE: $Oil \times / Gas \times / Liquid Injection / Wast Disposal / (If "Gas," Production / Underground Storage / Deep / Shallow /)$						
LOCATION: Elevation: 258.27	Watershed Co	Ny'S IN		· · ·		
District: 144	County CITUR	ч£	Quadrangle	ELLENS	OR0 . 7-5-	
COMPANY / HARANA CERCEN. The						
NODRESS 10 SXX 56 FUENTXXE,		Casing	Used in	Left	Coment fill up	
DESIGNATED AGENT T STERIES CHNING	2167	Tubing	Drilling	in Well	Cu. ft.	ĺ
ADDRESS SMIL		Size				
SURFACE OWNER ICHI. 112 placento		20-16				
ADDRESS ELCANALO, WW		13-10"	3.2	352	TT Side	
MIDERAL RIGHTS OWNER SHILL		9 5/8	1.X		1 <u></u>	
ADDRESS			1410	1910	1200'	
OIL NO GAS INSPECTOR FOR THIS W)RK	8 5/8	1110		1100	{
ADDRESS	· · · · · · · · · · · · · · · · · · ·	7				
PERMIT ISSUED 1/10/83			1.21	5(7-1	12201 .	1
DRILLING COMMENCED 6.111/23		<u>4 1/2</u> 3	<u> </u>	1.1.1	1776	1
DRILLING COMPLETED C/17/23						1
IF APPLICABLE: FUCGING OF DRY 1	HOLE ON	2	-{		, 	\mathbf{I}
CONTINUOUS PROGRESSION FROM DRILL		Liners		<u> </u>		1
REVORKING. VEREAL PERMISSION CO	used					
GEOLOGICAL TARGET FORMATION		÷	Don	+h (500	/ feet	•
Depth of completed well 50						•
Water strata depth: Fresh						
Coal seam depths:		- 15 COAL	pend un	ea in th		•
CPEN FLOW DATA					_	71
Producing formation White	f.V	Pa	y zone dep	oth 24.22.	-1776 Icct	
Gas: Initial open flow 20	CNcf/d	Oil: In	itial oper	1 flow_/	ź BW1/J	17
Final open flow (c	Mcf/d	Fi	nal open f	Elow K	Bp1\/9	15
Time of cpen flo	w between init	ial and f	inal tests	5 <u>6</u> h	ours	ন
Static rock pressure <u>90</u>	psig(surfac	æ measuro	ment) afte	er <u>11/</u> ho	urs shut. ir	1P
(If applicable due to multi						
Second producing formation	-	Pa	iy zone dej	pth	feet	L
Gas: Initial open flow						
Final open flow						
Time of open flo						
Static rock pressure						n

FORM IV-35 (REVERSE)

4708506154

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL GUNKE, ETC.

3513 TO 3530 3414-120 .35 ENTRY FOD 90 DUNNING FORM ZEDEPHLENS DISSEL FUL 100,000 SCF Now 15000 20/40 Stand RE-7244ED W/ 1,300,000 SCF Noy PLUG BACK TO 3510' FROMANING RUG 2052 10 2786 16 Here .35 ENTRY 1,000,000 SCF Now

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
لاسم المع	750	270	FRESH WATER
SHALL /SILTSTONE UNCLUSEL	370	1200	
INJIN	1800	1910	· · ·
Lien-	2560	2690	SHee CAS
CPP212 SPEECHLEY	3410	3470	
Lower Sperchery	3520	3530	
IST BALLTELIN	7120	4150	DISCERNEN
2ND BALLTON	4252	4 300	EGESS
BAND BORN .	4610	.1650	. OCT 27 1987
			DIVISION OF OIL & GAS DEPARTMENT OF ENERGY
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WELL LOG

(Attach separate sheets as necessary)

Wol' By: Date;

Note: Regulation 2.02(i) provides as follows: "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including weal, encountered in the drilling of a well."

La WEST	47	0850)615	55
IV-35 Rev 8-81 OCT 27 1987 DIVISION OF OIL & GAS DIVISION OF OIL & GAS	1 Allines	Farm 10	124 () 1 1. <u>11074</u> 47 - 08	
DEPARTMENT OF ENERGY WELL OPERATOR OF DRILLING, FRACTURING AND/OR STIM		r physicai	- CINNCE	
WELL TYPE: Oil \times / Gas \times / Liquid Injection (If "Gas," Production / Undergrou	und Storag	e/ Deep	1/ 5/ Sha	11cw/)
LOCATION: Elevation: <u>1004</u> Watershed, <u>()</u> District: <u>('LHY</u> County <u>()TUR</u>	HYS CA	Quadrangle	ELLEN	1 <u>80R0 7</u> .5
COMPANY HIGHLAND LESUFLOES, INC	· · · · · · · · · · · · · · · · · · ·			
ADDRESS TE BOX 56 ELLENBER INV DESIGNATED AGENT T. SEPHENS LANDELET	Casing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
ADDRESS SAME SURFACE OWNER 1011. 1110 TANCAND	Size 20-16 Cond,			
ADDRESS <u>ELLEWIZZO, LOV</u> MINERAL RIGHTS OWNER <u>SHUE</u>	<u>13-10"</u> 9 5/8	350	350	To Earle =
ADDRESS	8 5/8	2102	2100	'دمرر
OIL N'D GAS INSPECTOR FOR THIS WORK ADDRESS	7	·]	<u> </u>
PERMIT ISSUED $///8/83$	5 1/2			
DRILLING COMMENCED ///c/23	4 1/2	5078	5078	28.78
DRILLING COMPLETED 1/20/83	3			
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS THOGRESSICN FROM DRILLING OR REFORKING. VERBAL PERMISSION OBTAINED ON	2 Liners used			
GEOLOGICAL TARGET FORMATION S.M.V.C.M. FREC.	Hier Sie	Tak Dep	th T.R.	752 frot
Depth of completed well 5/09 feet	Rotary. X	/ Cabl	e Tools	
Water strata depth: Freshfeet;				
Coal seam depths:				e area? <u>NO</u>
OPEN FLOW DATA				
Producing formation ANDraid Stutchily Sheer	Tu. Par	y zone dep	th212-2	227 feet
Gas: Initial open flow // Mcf/d				
Final open flc4	Fi	nal open f	104 18	np1/g
Time of open flow between init		-		
Static rock pressure 1250 prig (surface				
(If applicable due to multiple completion				
Second producing formation				
Gas: Initial open flowMcf/d	Oil: In	itial oper	flow	D/14
Final open flowMcf/d	Oil: Fi	nal open f	:10v	No1/d
Time of open flow between init				
Static rock pressurepsig(surface	e measurem	ent) after	lvo	urs shut in

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(Continue on reverse wide) .

FORM IV-35 (REVERSE)

4708506155

DETAILS OF PLRFURFIED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, EIC. 3535 7D 50/8 88 Holes .39 201784 <u>THREE STAGES</u> 377462 1 - 5018 - 4360' 343,0005 CF N2 \$ 107045 CO2 " 2 · 4360 - 3850' 255,000 SCF N2 \$ 14 TONS CO2 " 3 - 380D · 3535' 300,000 SCF N2 \$ 12 TONS CO2 RE- 724C-4360 - 3850 - 350,000 SCF N2 \$ 10 TONS CO2

FORMATION COLOR HARD OR SOFT	TOP FEET	BOITIOM FEET	<u>REWORKS</u> Including indication of all fresh and salt water, coal, oil and gas
FORNATION COLOR HARD OR SOFT SAND SHALL & SILTBRONE INJUN JHME WELL FIATH SAND SHALE UPARE SUEECHERY SHALE LOWER SPEECHERY SHALE SHALE SHALE BLADRORD T. D.	TOP FEET 250 275 ./153 2100 2570 2600 2570 2600 2570 2600 2570 3220 3220 3220 3220 3220 3220 3220 32	BOTTOM FEET 2.75 1952 2103 2512 2600 2820 2820 2820 2820 2833 3480 3540 3620 4722 4300 5280 5280 5030	Including indication of all fresh
•			•

WELL LOG

(Attach separate shrets as necessary)

Rer. By: Date:

l	Note:	Regulation 2.02(i) provides as fo	llows:
ļ	<u> </u>	'ane term 'log' or 'well log'	shall mean a systematic
l	SILV	detailed geological record of all	formations, including
	51	'she term 'log' or 'well log' detailed geological record of all word, encountered in the drilling	of a well."
	i i		

TV-35 (Rev 8-81) TV-35 (Rev 8-81) (Rev 8-81)	
IV-35 (Rev 8-81)	
(Rev. 8-81) (Rev. 8-81) Date Jun. 1, 1983 Charator's Different Plant Vell No. One (1) Provident of filing Farm Richards OBI and Oses Binision API No. 47 - 085 - 1 WELL OPERATOR'S REPORT	
(Rev. 8-81) (Rev. 8-81) Date Jun. 1, 1983 Charator's Different Plant Vell No. One (1) Provident of filing Farm Richards OBI and Oses Binision API No. 47 - 085 - 1 WELL OPERATOR'S REPORT	
WELL OPERATOR'S REPORT	
Bigantinent of Mines Farm Richards Dil and Gas Hivision API NO. 47 - 085 - 1 WELL OPERATOR'S REPORT OF	
Well Operator's Report	
WELL OPERATOR'S REPORT	
	6190
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE	
J	
WEIL TYPE: Oil X / Gas X / Liquid Injection / Waste Disposal /	•
WEIL TYPE: Oil X / Gas X / Liquid Injection / Waste Disposal / (If "Gas," Production X / Underground Storage / Deep / Shallow	1)
LOCATION: Elevation: 770 G.L. Watershed Hushers Run of Hughes River	-
District: Clay County Ritchie Quadrangle Ellenboro 7.5	
	 (*)
COMPANY Parther Fiel Co	
ADDRESS P.O. Box 850, Bridgeport, W.Va. 26330 Caging Used in Left Cement	-
DESIGNATED AGENT Dave Harmer	
Cimples and Store Bridgeport, W.Va. 26330 Size	
ADDRESS Ellenboro, W.Va.	
MINERAL RIGHTS OWNER Richards Heirs	
ADDRESS Ellenboro, W.Va.	
Alderbolo, H.Va.	
OIL AND GAS INSPECTOR FOR THIS WORK Samuel 7 Hersman ADDRESS Smithville, W.Va.	≝] ,
PERMIT, ISSUED	
DRILLING COMMENCED February 20, 1983	is l
DRILLING COMPLETED February 28, 1983	-
IF APPLICABLE: PLUGGING OF DRY HOLE ON	7
CONTINUOUS PROGRESSION FROM DRILLING OR	┥.
REWORKING. VERBAL PERMISSION, OBTAINED	<u> </u>
GEOLOGICAL TARGET FORMATION Marcellus Shale Depth 5,990 fee	et
Depth of completed well 5,446 feet Rotary X / Cable Tools	
Water strata depth: Fresh 80 feet; Salt 980 feet	***
Coal seam depths: Is coal being mined in the area?	.
OPEN FLOW DATA	
Producing tormation Hamilton Shale Pry zone depth 5,446 Fee	
Gas: Initial open flow show. Mcf/d Oil: Ditial open flow Bbl/	t .
Final open flow - 575 Mcf/d Final open flow -0- Bb1/	ď
Time of open flow between initial and final tests 4 hours	d T
Static rock pressure 965 psig (surface mesurement) after 72 hours shut in	
(If applicable due to multiple completion-)	n • • • • •
Second producing formation Harrelf Shale Pay zone depth 5,098 feet	٥
Gas: Initial open flow show Mcf/d Oil: Initial open flow show Bbl/d	
Final open flow 350 Mot/d Oil: Final open flow show Bbl/d	1
Time of onen flow hetrianting dial dial and the show Bbl/c	1
Time of open flow between initial and final tests hours Static rock pressure :: paig (surface measurement) after hours shut in	•
- have shut i	b
Continue on nevened of de	•• -

10km 1V-35 (REVERSE) TOTAL STREET STREET

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DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, EIC.

3 stage stimulation: 750/000 mscf of N2 peristage. TForty holes per stage.

1 - Constanting Statistics (1990 - Constanting
PROTICING LOLLARIOU BILL FOR CUSTS TAR SCUB CODEL - 2 44

FORMATION COLOR HARD OR SOFT	···· TOP · FEET -	BOITOM FEEL	REMARKS Including indication of all fresh and salt water; coal, oil and gas
Big Lime Big Injun	1,663 1,769	1, 817	
Weir Horizon Gantz Sand Gantz Sand Gordon Sand	1,910 2,127 2,386	2,112,7127 2,140 ⁷¹⁰⁷³ 2,420	Show gas
Fifth Sand SLED SEDIFICA SF Brallier Shale Top ULICA	-2,580 2,973	2,390	Show gas
Warren Shale Brallier Shale Bottom (1947) Harrell Shale Top	and the second second	3, 312 3, 976	Show gas & oil Show oil & gas Show oil & gas
Benson Horizon	4,532	4,556	Show gas
Hamilton Shale Francisco H A.		5,526 19-JC 67-56	
ADDRIGHT D'O' TO'S 220' BIA GUS			しゃし ひょうしょうしゃ うちょう 上島 伝 ひょうきょう
CLASSING ECONTRACTIONS CON			Tomana and a state of the second second
· ICK. LICH:			WALCE HATTER FIME
			histo Dirrizal (************************************
Distriku	(Attach epo	B contents	as necessary)

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er **Fuel** Cc

Note: Regulation 2:02(i) provides as follows: "The term 'log! or 'well logis shall mean a systematic detailed geological record of all formations, including (1); 'encountered in the drilling of a well."

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OIL& GAS DIVISION OEFT. DF. MilVEE Bepartment of Mi-

and crewger the worked	•
Vell No. <u>H-1378</u> Farm Francis Seese	•
Operator's Well No. H-1378	•
Date Jar. 27, 1984 Derator's Well No. H-1378 Farm Francis Seese	
API No. 47 - 085 -	6277,

4708506277

WELL OPERATOR'S REPORT OF.

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WEEL TYPE: Oil X / Gas X/ Liquid Injection / Waste Disposal "Gas," Production x / Underground Storage / Deep / Shallow x /) (Iſ Elevation: 1059 LOCATION: Watershed Hushers Run County Ritchie Quadrangle Harrisville, WV 200 District: Grant

COMPANY Haught Inc. Cement ADDRESS Smithville, WV 26178 Used in Left . Casing fill up DESIGNATED AGENT Warren R. Haught Drilling in Well Tubing Cu. ft. ADDRESS Smithville, WV 26178.2 Size 20-16 SURFACE OWNER Francis & Barbara Seese Cond. Ellenboro, WV - 26346 ADDRESS 13-10" MINERAL RIGHTS OWNER Same 9 5/8 ADDRESS 815/8 175 <u>sacks</u> 1160 OIL AND GAS INSPECTOR FOR THIS WORK 7 ADDRESS Smithville, WV Hensman . 12 5 1/2 PERMIT ISSUED February 21. 1983 1/2 ٩ 4182 330 sacks DRILLING COMMENCED May 4 3 DRILLING COMPLETED 2 IF APPLICABLE: PLUGGING OF DRY HOLE ON **(**,) CONTINUOUS PROGRESSION FROM DRILLING OR Liners REWORKING. VERBAL PERMISSION OBTAINED used ON GEOLOGICAL TARGET FORMATION Depth 3500-4288 feet Devonian Shale feet Rotary X Depth of completed well 4288! Cable Tools

Water strata depth: Fresh feet; Salt feet Coal seam depths: None Is coal being mined in the area?, NO

haei

OPEN FLOW DATA

FEB 8 884

IV-35+ (Rev 8-

> Producing formation Devonian Shale The Pay-zone depth 3872-4100 feet Gas: Initial open flow 120 Oile Initial open flow Mcf/d Bhl/d 60 Mcf/d Final open flow Final open flow ·Bbl/d 15 . Time of open flow between initial and final tests_24 hours Static rock pressure 480 - psig (surface measurement) after 24 hours shut in (If applicable due to multiple completion ---) Second producing formation Pay zone depth feet

Gas: Initial open flow Mcf/d Oil: Initial open flow Bb1/d • Mcf/d Oil: Final open flow Final open flow Bbl/d Time of open flow between initial and final tests · hours Static rock pressure an prig (surface measurement) after hours shut in ילליו ז'יילג למייין ליסיוב, בהסנות

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FORM IV-35 (PEVERSE)



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DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSI CHANGE , ETC. N. S. - al was Nitrogen fraced by Nowsco 14 a 26 - 94 a - 94

720,000 SCF Nitrogen [-7]

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Perforatons: 21--3872--4100

1 20 ENVERT COLOURNE 21112 A EXIDIVITIATIA ENTRITED. 20

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FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTION FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Réd Rock	Red	Soft	0.	•32	Hole dusted all the way to T.D.
Slate	Gray		32	-47	na sy na anana na panga na na na ana ana na na na na na na na
Red Rock	Red	Soft	47	63	A start to the store of the start of the sta
Slate Red Beek	Gray Red	Soft	63 109 1,	.109	a an unadar unain an in standard i dagan da andar una an a
Red Rock Slate	Gray		138	-152	A WE STREET STREET
Red Rock	Red		152	163	A HARRISON BITTEN CHIMESTER -
Slate	Gray		• 163	220	IN THE PARTY OF THE PARTY OF THE
Sand	Gray	Med.	220	288	
Slate	Gray		288	G1 6	AND STREET STREET, STR
Sand .	Gray	Med	316	. 350	White property and the second s
Red Rock	Red Gray	Soft Soft	350 359	- 359 · ··· ····· 460	and the second of the second s
Red Rock	Red	Soft	460	501	ME LUL RICHTS' CARER S. IN
Slate	Gray		501	.534	
Sand	Gray		534	583	THE ADS HORD CALL AND THE STORE
Red Rock	Red	Soft	583 -	600	
Slate	Gray	· · · · · · · · · · · · · · · · · · ·	600	680 ; oL1	VIDRES SEPREN
Sand	Gray.		. 680	726	THE OWNER STREET CONTRACTOR
Red Rock	Red Gray	Soft Soft	726 800	875	COLUMN CONSCIENCE AND
Sand	Gray	•		910	······································
Slate	Gray	! Soft !	910	_965	CHARLEN COMMENTED STATES
Sand			-965-	- 984, MICH 1	AT A A A A A A A A A A A A A A A A A A
Big Red Roo		Soft	984	1005 CILLT	
Sand	• •		1005	1036	NUISSING. VEREAL PETMISSICH
Slate Little Dunl	Gray		1036 - 1055 -	1055	
Slate	Gray		1069	1084	
Big Dunkard	· -		10842	1132 110.00	A MORINAROA TEORAR JADIDLOFT
Slate	Gray		1132 39 35	1156 Juge	Dirth of unpleted will
Sand	Gray		1156	1172	
Slate	Gray			1200	Briten strikers Constitutes
lst Gas Sai	nd Gray	Hard 4 1	1200	1241	n : : : : : : : : : : : : : : : : : : :
Slate 2nd:Gas Sau	Gray d Gray		12 0 1 1288	-1288	
	Gray		1314	1432	ADAM TO AREA TO
		ay is such Hards 32			Fraducting Countricity navo
Slate .	Gray	Soft Inconstruction			eas: Initial apan flow
بالمستعدية فالمالية المراد	· · · · · · · · · · · · · · · · · · ·			arate sheets	AR MACARRAMI)
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ni dine el	ucci	S replies (datae)	Well	Operator	
	• • • • • • • •		•	tiple as 11	(1) (11 - 12 - 10 2 - 1 (11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
4 - 3, 7, 7	· · · · ·		By:	Marien	11, Adaptel)
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SN LOE		wolt na plant		1171 A. A. A.	sali and lents
	مندماته برم م				

detailed geological record of all formations, including will, encountered in the drilling of a well."

FORM IV-35 Page two - Well Log Continued :

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4708506277

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Well No. H-1378 API No. '47-085-6277

FORMATION CO		D OK SOFT ;	TOP FEET	BOTTOM FEET	REMARKS
2nd Salt Sand Shale Maxon Sand Lime Big Injun Slate Berea Slate Warren Sand Devonian Shale	Gray Gray Gray Gray Gray Gray Gray Gray	Hard Soft Hard Soft Hard Soft Hard Soft	1624 1649 1829 1865 1921 2082 2720 2754 3410 3500	1649 1829 1865 1921 2082 2720 2754 3410 3500 4288	Gas show £1800 1949 2103' 3100' 4228'
				N.	<i>.</i>
			Haught Ind Well Of By: Way	ren R. Ha	ight PAES
			Date: Jan. 27	7, 1984 <u>(</u>	<u></u>



4708506293

RIT. 6293

- STREED					
FIE GERVEN	A FEI	•	•		
	55		*	•	
IV-35		Date	Septembe	r 1, 1983	
- (Rev 8-81)		Operation	x's ,	· .	— ; ;
State of Wes	et Airgin			<u>me (1)</u>	
Di- Di- Department o	•	Farm	McVay		
	Bivision	APINO.			
WELL OPERATOR	'S REPORT				•
OF DRILLING, FRACTURING AND/OR STIM	אדידיג זוי	D DUVETON	. CHANCE		
Drilling, Fractorius Adjor Stin		JA FRISICA			• .
WELL TYPE: Oil X / Gas X./ Liquid Injection	n / Wag	e Diemea	- ۱ /		
(If "Gas," Production X / Undergro	und Stora	je / Dee	p/ Sha	110w_/)	
LOCATION: Elevation: 985 G.L. Watershed	Husher's	Run			
District: Clay. County Rit			e Elleni		. s. <u>{</u>
	•				,
·			۰ ۰		• •
COMPANY Panther Fuel Co.			•	·	
ADDRESS P.O. Box 850, Bridgeport, W.Va. 26330	Casing	Used in	Left	Cement fill up	
DESIGNATED AGENT Dave Harmer	Tubing	Drilling	in Well	Cu. ft.	
ADDRESS' P.O. Box 850, Bridgeport, W.Va. 26330	Size		·		1
SURFACE OWNER Bennie McVay	20-16 Cond.				
ADDRESS Ellenboro, W.Va./	13-10"	30		•	
MINERAL RIGHTS OWNER Bennie McVay	9 5/8		·	· · · · · · · · · · · · · · · · · · ·	
ADDRESS Ellenboro, W.Va.	8 5/8	1,211	1,211	to surfaœ	
OIL AND GAS INSPECTOR FOR THIS WORK Samuel Hersman ADDRESS Smithville, W.Va.	7			•	
Hersman ADDRESS Smithville, W.Va.	5 1/2	<u> </u>			
DRILLING COMMENCED March 3, 1983	4 1/2	·	5,766	650 sacks	
DRILLING COMPLETED March 11, 1983	3				
IF APPLICABLE: PLUGGING OF DRY HOLE ON	2		£	.· 	<u>}</u> .
CONTINUOUS PROGRESSION FROM DRILLING OR	Liners		•		
REWORKING. VERBAL PERMISSION OBTAINED	beau		,	*	1
			•	<u> </u>	4
GEOLOGICAL TARGET FORMATION		,		feet	
Depth of completed well 5,700 feet			•		
Water strata depth: Fresh 70 feet,	•				
Coal seam depths:	Is coal	being min	ed in the	area?	
OPEN FLOW DATA	• • •		··		
Producing formation Hamilton Shale .				feet	
Gas: Initial open flow show Mcf/d	Oil: In	tial open	flow	00b1/d	•
Final open flow 475 Mat/d	Fi	val open f.	Law	0- <u>Bb1/d</u>	
Time of open flow between init		· · · · · · · · · · · · · · · · · · ·			•
Static rock pressure 925 paig (surfac	e measurer	ment) after	r 72 hou	rs shut in	•
(If applicable due to multiple completion)	•		•	•
Second producing formation Harriszer Sha	e Pay	zone dep	th 4,68	<u> feet</u>	
Gas: Initial open flow show Mot/d.	OIL: IN	Itial open	tlow_s	huw Bb1/d	
Final open flow 520		•			
Time of open flow between init	•				
Static rock pressure		ant) after	<u></u> hou	rs shut in	•
A hill when a second	aller	(Contin	tie on re	verse uide,	l
the state of the s			•••••		

FURM IV-35 (REVERSE)

1.1 DEFAILS OF PERSONATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, EIC. 750 mscf of N₂ per stage, approximately 40 holes. Nows co stages: A CONTRACTOR ianility be Anenthengals. 1767 Smith date and the 230 •

Dalto C NET STATES

- 1⁰ 151 10112 2121 201139

MATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coul, oil and gas
Big Lime	1,808	1,942	0,
Big Injun	1,960 ,	2,050	Show oil & gas
Weir Sandy Shale	2,150	2,240	Show gas
Gantz Sand	2,410	~2,422	
Gordon Sand	2,520	2,650	Show gas
Fifth Sand	2,816	2,826	Show oil & gas
Brallier Shale Top	2,970		AB01 (100 A
Warren Shale	3,475	3;550	Oil & gas IR LARCEN
Brallier Shale Bottom		4,070	Oil & gas 2028CW
Harrell Shale Top	4,070 -		Oil & gas 20 C
Benson Horizon	4,646	4,695	Gas
Harrell Shale Bottom		5,132	in the second
Hamilton Shale .	5,132 -	5,839	Gas providerto tur f 1990
		and and a second second	A MARTINE 2 VELOSED MILLION
and the second	•••• •••	•••••	AND BO WELLINGTHE SERVER A TEL
		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	E ST. HUNE MELETINE EN MENNED. NASSA SERVICE AND SERVICE EN MARKEN
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and the second			Casher and the second for the second
بر سب به العربي الم الم الم الم الم الم			The second second second
Strate.			and the production matter (1990) and
Sugar Sugar			and the second
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and the second			naturen 2 4 hu tarat .
And the second of the second			2018 Mago Lannah T. Canit .
		irate sheets	as nevessary)
A Rock in E. William In			
5.12 ² 10 (.7.5			the second second second second second
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white the second second second		tigete - Ex	, Vice President
and the second			March 1, 1983
en and stand and a stand a stan	- MILLIN		· · · · · · · · · · · · · · · · · · ·

including d guological record of all formations,

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Department, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name:	Seese, I	Harley J		Operator Well	No.: EPI-004	4	
LOCATION:	Elevation	, 882'		Quadrangle:	Ellenboro		
	District:	Clay		County:	Ritchie		
			_Feet South of			Sec.	
			Feet West of _				
Well Type: (אר	_GAS_X					
			-				
Company	WV DE		Coal Op				
		street, SE	or Owne	×r			
• .	Charleston	, WV 25304	~				
Agent	Kenneth	Vannov	Coal Op or Owne		1		-
- Permit Issu	www.comment.comment.comment.com		01 Owne				-
			and the second				-
STATE OF W	ECT NOC	INITA KV	Al	FFIDAVIT			
County of Floy				A		ķ	
Rodney Osbor	ne	and Es	still Johnson		being first du	ly sworn according to law de vere employed by the above na	pose
well operator	, and partic	ipated in the wo	ork of plugging an	d filling the abo	ove well say that	at said work was commenced the following manner:	i on
TYPE	F	ROM	TO	PIPE RE	MOVED	LEFT	
115 sks CAC		4737'	2997'				
20 sks CAC		2058'	1776'	1231' ol	F4 1/2"	350' of 13 3/8"	
50 sks CAC		1309'	1:100'			1950' of 8 5/8" (Attempted to pull)	
45 sks CAC	·	907'	750'			3661' of 4 1/2"	
160 sks CAC		416'	Surace				
				·····		Perfd @ 2022, 1917', 1815', 1246',	
Description	of monume	ent: 7" casing w/	API # 36" above grou	Ind	and	406', 319', 222', and 100'] Wina
said well was	completed	on the <u>8</u>	lay of Feb	, 20 <u>22</u> .		STORELLA M.	SI SI
			Bach	7		6 6. M 10 0 0	
And further	deponents	saith not.	1848 0			ATOM S STAN	
			Estill &	chrom	-	. 9:2	0000
		_				Z C COLIC	
Sworn and	subscribe l	pefore me this	9 day of Feb	ruary	, 20 22	A	CN DANNE
My commissio	n expires:	2/4/26		Ste	ele mi	Sone RGE, K	AN INTERNET
				N	lotary Public		
Affidavit review	wed by the	Office of Oil and	d Gas: Doug	plas Neu	olon	Title: Oil & Gas Inspector	supervisor
			U.				

A WILL	J.			85063	
			-	85063	006
IV-35 (Rev 8-81)	2	Date 🗢 Operati	ney E,	1987	
DECIMUSIN State of Mer	t Mirnin		5. Eli-	4	
Department :			HALLY J.		
0CT 27 1987 U Ohi und Gas		·		85-130	
DIVISION OF OIL & GAS WELL OPERATOR DEPARTMENT OF ENERGY OF	-				
DRULLING, FRACTURING AND/OR STIM	ULATING, C	DR PHYSICA	L CHANGE		
WELL TYPE: $Oil \times / Gas \times / Liquid Injection(If "Gas," Production / UndergrowLOCATION: Elevation: \delta^{2-\gamma} Watershed$	Ind Storag	re`Disposa ge/ Dee	1_/ p/ Sha	1104/)	
District: CLAY County Cill	111	Quadrang1	e ELCEN.	80R0, 7.5	
COMPANY /416-4UIN) LEGICLEES, MIL				49	
NODRESS E. BCK 56 Eller Millio, 101/				(Constant)	
DESIGNATED AGENT T. STENATU (40.94216)	Casing	Used in	Left	Cement fill up	
ADDRESS SAME_	Tubing	Drilling	in Well	Cu. ft.	
SURFACE OWNER ANILLEY J. SEESE	Size 20-16				
NODRESS Ellensicio LUV	Cord.				
MINERAL RIGHTS OWNER SHE	13-10"	350	330	B SURF	
ADDRESS	9'5/8				
OIL AND GAS INSPECTOR FOR THIS WORK	8 5/8	1950	1950	12-00'	
ADDRESS	7				
PERMIT ISSUED 3/7/73	5 1/2				
DRILLING COMMENCED /////83	41/2	4400	4900	2630'	
DRILLING COMPLETED ///1///.3	3				
IF APPLICABLE: PLUGGING OF DRY HOLE ON	2				
CONTINUOUS PROGRESSION FROM DRILLING OR REVORKING. VERBAL PERMISSION OBTAINED CN	Liners used		1.		
GEOLOGICAL TARGET FORMATION . Diddifici)		Dent	a caro		
	otara X	_/ Cable	th Slipe		1
Water strata Cepth: Freshfeet;		/ Cable feet	10015		
· Coal seam depths:				arca? No	
•	15 0001 /		30 771 1716	arcar/V/1	
OPEN FLOW DATA					
producing formation, 21191(2), Sticelley, Yuc	Rai Pay	zone dept	h 1/1-	3474 Lect 12	
Gas: Initial open flow 200 Mcf/d					
Final open flow /75 Mcf/d					
Time of open flow between initi					
Static rock pressure / 30. psig(surface	neasurem	ent) after	1. hou	rs shut in O	
(If opplicable due to multiple completion-					
Second producing formation	Pay	zone dept	հ	feet	
Gas: Initial open flowMcf/d	Dil: Ini	tial open	flow	b) /d	
Final open flowNcf/d	Oil: Fin	al open fl	.04	b) (d)	
Time of open flow between initi	al <u>and</u> fi	nal tests	ho	urs	
Static rock pressurepsig(surface)	measureme	nt) after_	hou	rs slmt in	

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(Continue on reverse wide) • •

FORM IV-35 (REVERSE)

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4708506300

4708506300 P DETAILS OF PERFORATED INTERVALS, FRACINARING OR STIMULATING, PHYSICAL CHANGE, ETC.

155 STARC - 4666 TO 4370 . 22 Hous . 39 ENTRY 1,000,000 See No. 201745 CO.2 200 STARC - 42-15 TO 3904 21 Hous .39 Lorey 962,000 See No. 2010 CO.2 300 STAR - 3798 TO 3474 23 Hous .35 ENTRY 1,113,000 SEF No. 231040 CO.2

$\begin{array}{cccccccccccccccccccccccccccccccccccc$	REVIRKS indication of all fresh ter, ccal, oil and gas
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
STRAY SAUD (?) 4300 4320 Bylack & SILTSTANE 4320 4625	OCT 27 198/
1312AD 705D SHALL & SILTSTOWE T.D. 5000	ŝ •

WELL LOG

(Attach separate sheets as necessary)

Well By: Date:

A DE LEST		17085			
IV-35 TENEVATERINA		Date 2	2/8/8	8	
IV-35 (Rev 6-61) ECEIVED		Operato	or's . EPI-	12	
FEB 16 1988 Jul State of Her	• •		ED. MURI		
DIVISION OF OIL & GAS	-			F5 - 6304	
DEPARTMENT OF ENERGY Oil und Ous	inision	NET NO.	71 - 02	<u> </u>	-
WELL OPERATOR OF DRILLING, FRACTURING AND/OR STIM	ULATING, C				
WELL TYPE: Oil <u>XX</u> Gas <u>XX</u> Liquid Injectic (If "Gas," Production / Undergro LOCATION: Elevation: <u>1039</u> Watershed A	und Storag	e/ Dee	1/ p/ Sha	1104/)	
District: CLAY County LITC.			e		
/		-			
COMPANY EVELING THEORETICO, ENCLASSING LASONACES					•
NODRESS / ET. 83 Box So ELLENGLO WY 26346	r		J	10	
DESIGNATED NEENT T. STEPHEN LAND VOIGT	Casing	Used in	Left	Coment fill up	
	Tubing	Drilling	in Well	Cu. ft.	
NDDRESS EAML	Size		1		
SURFACE OWNER GEOLGE MURIHY	20-16 Cond.				
NODRESS ELLENALLO, NV 26346	13-10"	350	350	SURF.	
MERERAL RIGHTS CATER State	9 5/8				
NDORESS	8 5/8	1980	1980	SURF.	
OIL AND GAS DISPECTOR FOR THIS NORK Service	7				
PERMIT ISSUED 3-07-83	5 1/2				}
DRILLING CONVENED 10-25-83	4 1/2				
	3.27	3660	3660	2000 FS.]
DRILLING COMPLETED 10-7E-F3	2				
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REFORKING. VERBAL PERMISSION OBTAINED ON	Liners used				
GEOLOGICAL TARGET FORMATION DELEMAN SHALE	b		1. 710		4
Depth of completed well SD10 feet				<u>5010</u> feet	
Water strata depth: Fresh 250 feet;				••••••••••••••••••••••••••••••••••••••	
· Coal seam depths: NA					
	15 001	being min	ea nu the	area?	
OPEN FLOW DATA			.See 1	216.0-	7
Producing formation Devoluted Silve	Pay	r zone dep	th Har	Scio Inct	7
Gas: Initial open flow 100 Hef/d	Oil: Ini	itial open	flow	1 DW/3	
Final open flow 200 Mcf/d					
Time of open flow between init					1
Static rock pressure 1375psig(surfac		ment) afte	r <u>48</u> hou	urs shut in	
(If applicable due to multiple completion					
Second producing formation	Pay	y zone dep	th	fort	
Gas: Initial open flowNef/d	Oil: In	Itial open	flow	6/[din	
Final open flow Mcf/d	Oil: Fi	val open f	104	14170	J
Time of open flow between init	ial and f	inal tests	<u>h</u>	ours	
Static rock pressurepsig(surface	e measturem	ent) after		urs slint in	ł

(Continue on reverse vide)

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FORM IV-35 (REVERSE)

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4708506304

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. WELL WAS OPEN HOLE FRACES FROM 3660'- 5010' W/ 1,250,000 SCF NITROSEN • •

FEB 1 6 7988

1.00

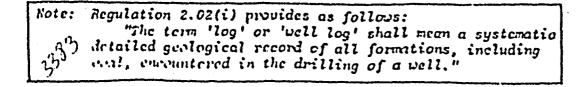
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FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
SURFARE, SANOS & SHALL	D	1880	Stew GAS
BIG LIME	1820	1950	
BIG JAJJUN	1920	2070	
WEIR SAND	フォアロ	2200	NARIOUS SHOWS CIL/GAS
BEREA SAND	233の	2310	
GANTZ GANE	2430	215D	
GORDON	こそうご	275D	
DENOMIAN SHARE	こと50	5010	
• 			, •

(Attach separate sheets as necessary)

ator We) By: 2 Date:



DIVISION OF OIL & GAS DEPARTMENT OF ENERGY

	4	7085	•	
		Date	· 2/8	88
(Rev 8-81) FEB 16 1988 Sinte of 3		Operato Well No	or's . <i>EP</i> T-	12
· · · · · · · · · · · · · · · · · · ·	-	Farm 4	VESTVAC	
DEPARTMENT OF ENERGY Oil und O	t of Allines			15 - 6444
WELL OPERATION	F			
DRILLING, FRACTURING AND/OR ST.	IMULATING, O	R PHYSICA	L CHANGE	
WELL TYPE: Oil XX / Gas XX / Liquid Inject (If "Gas," Production / Underg	round Storag	e/ Dee	1/ P/ Sha	1104/)
LOCATION: Elevation: 1024 Watershed_			<u> </u>	
District: <u>CLAY</u> County <u>Rate</u>	HIL	Quadrangl	e ELLER BA	207.5
r				
COMPANYEDresy TADIUCTION, FOR / HIGHCAND RESOURCES				
NODRESS At. 83 Bac So Elleviceo, WV 26345	Casing	Used in	Left	Coment
DESIGNATED NEENT T. STOREN (ANDVOILT	Tubing	Drilling	j	fill up
ADDRESS State	Size		111 10011	Cu. ft.
SURFACE CALLER WESTVACO	20-16			
NODRESS TALKERSBALL, NV 26101	Cord,			SURF.
MENERAL RIGHTS OWNER JUNN BALL	13-10"	285	255	SURG.
ADDRESS HARACUL ACRES, ST MARYS, WU 26170	9 5/8			5 0 5
OIL NO GAS INSPECTOR FOR THIS WORK Since	8 5/8	2111	2/11	SURF.
HERSAINAS NOORESS CHIKE, LUY	. 7			
PERMIT ISSUED 5-06-83	5 1/2	ACIE	10.10	
DRILLING CONSERCED SECTION 10-29-83	<u>4_1/2</u> 3	4925	4980	600 SFS.
DRILLING COMPLETED 18-7-83			<u> </u>	
IF APPLICABLE: PLUCGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR RENORKING. VERBAL PERMISSION OBTAINED	2 Liners used			
αι	L	1	I	
GEOLOGICAL TARGET FORMATION DEVENIEN SHALL				Scu7 feet
Depth of completed well 5007 feet				•
Water strata Depth: Fresh 100 feet				
· Coal seam depths: NA	Is coal	being min	ed in the	area?
open flow data				
Producing formation Devening State	Pay	/ zone dep	出4290-	the feet
Gas: Initial open flow to Mcf/d	Oil: Inj	tial open	flow /	
Final open flow 100 Mcf/d				
Time of open flow between in				
Static rock pressure 1050psig(surf				
(If applicable due to multiple completi				
Second producing formation		zone den	ව ආ	Cont
Gas: Initial open flowlef/d	Oil: In	itial open	flow	N_///
Final open flowHcf/d	Oil: Fir	ual open f	ີ່ ໄວະ	
Time of open flow between in	utial and f	inal tests	; h	JULTS
Static rock pressurepsig(surfa	ice measurem	ent) after		ni huka an

(Continue on reverse wide)

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FORM IV-35 (REVERSE)

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4708506444

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

4290-4685-23 Hoces .49 FRACED WITH 1, 100,000 SCF. N2

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DIVISION OF OIL & GAS DEPARTMENT OF ENERGY

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
SURFACE, SANDS & SHALE KEENLE	0 1922	1922 1950	SHUN GAS
BIG LIME BIG JUJUN	1970	2065	Sthow Crist & OIL
WEIR SAND BELEA SAND	2160	22000	
GANTZ SIND GORDON SIND	2440 2830	2150 2845	י באט נהחוקר
DRUGNIAN SHARE	2845	5007	VHIRIOUS SHOWS OIG & GAS
· · ·			
	1	1	l

WELL LOG

(Attach separate sheets as necessary)

(er OBRCES NC. IGHLA KI tator H:11 0; Revenu By: Date:

•					4708	50862	31 Re	vised back page.
WR-35			Revised	10-23-00		1	7-Aug-99	back page.
		vision of Secti	Enviror On of O	st Virgini nmental Pi il and Gas eport of V	ia cotection	: # 47- 85	-08631	
Farm name:	FOX, R. E	. & M. A.	s.	Operator	Well No.:	DAWSON-FO	Х З	
LOCATION:	Elevation	: 830.00	Quad	rangle: El	LENBORO			
	District: Latitude: Longitude	9000 B	'eet Soul 'eet West	th of 39	ounty: RITC Deg. 17Min Deg. 2 Mi	. 30 Sec.		
Company: TERM	4 ENERGY C EAST MAIN				·			
	RISVILLE,		-0000	Casing &		Left	Cement Fill Up	
Agent: LERC	DY BAKER			Tubing	Drilling	in Well	Cu. Ft.	
Inspector: d	JERRY TEPH	ABOCK		Size			12osks	
Permit Issue Well work Co	ed: ommenced:	08/17/9 08/24/99	9	10 3/4"	291	291	to surface	
Well work Co Verbal Plugo	ompleted:	01/14/0		7"	1493	1402	co e cu.	
Permission Q Rotary	granted on Cable	X Ria			1495	1493 	63.5 cu.	
Total Depth Fresh water	(feet)	1698						
Salt water o						RECEIVE Office of Oil & G		
Is coal bein Coal Depths	ng mined i		(/N) ? <u>N</u>		· · · · · · · · · · · · · · · · · · ·	JUL 12 20		·
OPEN FLOW D	АТА			•		Environmental Prot		
Gas: I F T Static	rock Pres	n flow flow n flow be sure	MCF MCF etween i psi	/d F: nitial and g (surfact	Pay zone nitial open inal open f d final tes e pressure)	flow low ts after	Bbl/c Bbl/c Hours Hours	
Gas: 1 F	inal open	flow <u>5</u> n flow b	MCF 1 MCF etween i	/d Oil: I /d F nitial an	Pay zone nitial open inal open f d final tes e pressure)	low <u>slow</u>	Bbl/c	
NOTE: ON BA INTERVALS, LOG WHICH INCLUDING C	FRACTURING	OR STI	MULATING ETAILED	GEOLOGIC	AL CHANGE.	ETC. 2).	THE WELL	
				ā	2 50	<u> </u>	•	
		For:	By: Date:	IERGY CORP	- De	signated	Auent	
٠			Ducc	-/ 0 - 1	<u>- 2000</u>	8-25-0	<u>y</u>	
		-					Office of Office Office of Chio	as (
							AUG 2 6 200	
							MM Denarimai	l l

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WV Department or Environmental Protection

Well was stimulated as follows:

6 5. 0	
6 ft Gas gun 1524	 1530
10fr 0	
10ft Gas gun 1533	 1543
1 fr 0.	
4 ft Gas gun 1635	 1639

Well Log	Тор	Bottom	Water
Sand, shale & RR Sand Slate & shells Sand Slate & shells Sand Lime Slate & shells Lime Sand Lime	0 1218 1285 1470 1479 1489 1542 1564 1576 1625 1649	1218 1285 1470 1479 1489 1542 1564 1576 1625 1649 1698	20' - 1/2" stream 30' - 2" stream
Geophysical Log	Top	Bottom	
3 rd salt Maxon	- 1525 1622	1560 1654	· ·

Well was reshot on 8-18-2000 as follows:

.

400# Iremix 664 3.5 X 33.3 1623' - 1654.5 Results of 1/2 BO/day, 50 MCF/day Rock pressure 120 psig in 20 hours.

4708508631

4708509721

WR-38 Rev. 5/08

API# 47-085-09721 P

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Department, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

	MARY M	TASON.	_Operator Well No.:_ W-	1590	
LOCATION: E	evation: 1/5	-7'	Quadrangle: Ellenb	ore	
			County: Ritchie		
	100 mm		of <u>39</u> Deg. <u>17</u> Min.		
			of <u>81</u> Deg. <u>65</u> Min		
Company F	Date	or Ow	Operator N/A Operator N/A ner AFFIDAVIT	ly sworn according to law depose	
and say that they			g and filling oil and gas wells and v	vere employed by the above named	
well operator, an	d participated in the	work of plugging	and filling the above well eavy the	at and discussion and a second second	
the				at said work was commenced on	
the			e well was plugged and filled in		
the					
	_day of	, 20, and the	e well was plugged and filled in	the following manner:	
	_day of	, 20, and the	e well was plugged and filled in	the following manner:	
	_day of	, 20, and the	e well was plugged and filled in	the following manner:	
	_day of	, 20, and the	e well was plugged and filled in	the following manner:	
ТҮРЕ	_day of	, 20, and the	e well was plugged and filled in PIPE REMOVED	the following manner:	
TYPE	day of	, 20, and the TO	e well was plugged and filled in PIPE REMOVED	the following manner:	
TYPE	day of	, 20, and the TO beTivecent PL	e well was plugged and filled in PIPE REMOVED	the following manner:	
TYPE	day of	, 20, and the TO beTivecent PL	e well was plugged and filled in PIPE REMOVED	the following manner:	
TYPE	day of FROM Spacers nonument: npleted on the ponents saith not.	, 20, and the TO	e well was plugged and filled in PIPE REMOVED	the following manner:	
TYPE	day of FROM Spacers nonument: npleted on the ponents saith not.	, 20, and the TO	e well was plugged and filled in PIPE REMOVED	the following manner:	
TYPE	day of FROM FROM Spacers nonument: pleted on the ponents saith not. scribe before me th	, 20, and the TO	e well was plugged and filled in PIPE REMOVED	the following manner:	

WR-35 Rev (9-11)

State of West Virginia Department of Environmental Protection Office of Oil and Gas Well Operator's Report of Well Work

API #: 47-085-09721

Ju

Farm name: Everett Mason		Opera	Operator Well No.: W-1598			
LOCATION: Elevation: 1057		Quad	rangle: Ellenborg)		
District: Grant		Coun	ty: Ritchie			
Latitude: 12050	Feet South of 39	Deg. 17	Min. 30	Sec.		
Longitude 4460	Feet West of 81	Deg. 05	Min. 00	Sec.		

Company: Haught Energy Corporation

Address: 12864 Staunton TPKE	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Smithville, WV 26178				
Agent: Warren R. Haught	13-3/8"	31'	31'	Existing
Inspector: David Cowan	9-5/8"	321'	321'	Existing
Date Permit Issued: April 6, 2011	7"	2050'	2050'	Existing
Date Well Work Commenced: 2/07/2012	4-1/2"	6103'	6103'	Existing
Date Well Work Completed: 04/13/2012	2 7/8"		5,970'	NA
Verbal Plugging:				
Date Permission granted on:				
Rotary Cable Rig 🖌				
Total Vertical Depth (ft):				
Total Measured Depth (ft):				
Fresh Water Depth (ft.):				
Salt Water Depth (ft.):				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): NA				
Void(s) encountered (N/Y) Depth(s) None				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Conve	Pay zone d	epth (ft)		
Gas: Initial open flow	MCF/d Oil: Initial open flow	Bbl/d		
Final open flow	MCF/d Final open flow	Bbl/d		
Time of open flow betw	een initial and final tests	Hours		
Static rock Pressure	psig (surface pressure) after	Hours	BECT	9
Second producing formation	n Pay zone dep	th (ft)	REC-"	
Gas: Initial open flow	MCF/d Oil: Initial open flow	Bbl/d	REC	•
Final open flow	MCF/d Final open flow	Bbl/d	,-	
Time of open flow betw	een initial and final tests	Hours	Omice	noilion
Static rock Pressure	psig (surface pressure) after	Hours	Office	

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believen that the information is true, accurate, and complete.

Signature <u>-13-12</u> Date



Were core samples taken? Yes No X

Were cuttings caught during drilling? Yes_____No__X

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Existing Well

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Existing 6044' - 6068' Packer @ 5.970' Plug Back Details Including Plug Type and Depth(s): 6,140' to 6,068 - Class A Cement Formations Encountered: Top Depth____/ Bottom Depth Surface: Existing HECEIVED Office of Oil and Gas Office of Oil and Gas WV Department of Environmental Protection

APPENDIX D

Public Service District Affidavit

Underground Injection Control Permit applicants must identify all publically recorded drinking water sources within a one (1) mile radius of the proposed injection well facility. If no drinking water sources are present within this radius a written affidavit shall be supplied by the local Public Service District (PSD) as ample verification.

"I certify under penalty of law that (state name of business)

Jay-Bee Oil & Gas, Inc.

has verified with the public service district (state name of PSD)

N/A - SEE COVER LETTER

that there are no such publically recorded sources.

(Signature of Authorized Representative)

Sworn and subscribed to before me this _____ day of _____, 20____.

, my commission expires _____

(Notary Signature)

RECEIVED Office of Oil and Gas

NOV 0 6 2023

WV Department of Environmental Protection



APPENDIX E Water Sources

Operator: Jay-Bee Oil & Gas, Inc. Year 2023 UIC Permit # 2D08510284001

		Source # 1	Source # 2	Source #	Source #
Water Source Name		Michael Lamb	Camp Hope		
Northing		4,345,498.07	4,345,411.76		
Easting		493,124.61	493,101.14		
Parameter	Units				
TPH - GRO	mg/L	SEE ATTACHED DOCUMENTS			
TPH - DRO	mg/L				
TPH - ORO	mg/L				
BTEX	mg/L				
Chloride	mg/L				
Sodium	mg/L				
Total Dissolved Solids (TDS)	mg/L				
Aluminum	mg/L				
Arsenic	mg/L				
Barium	mg/L				
Iron	mg/L				
Manganese	mg/L				
рН	SU				
Calcium	mg/L				
Sulfate	mg/L				
MBAS	mg/L				
Dissolved Methane	mg/L				
Dissolved Ethane	mg/L				
Dissolved Butane	mg/L				
Dissolved Propane	mg/L				
Bacteria (Total Coliform)	с/100m <u>т</u> L				
Page of	NOV 0 6 2023 WV Department of Invironmental Protection	Office of Oll and Gas	Promoting a healthy enviro	onment.	dep

(4/25)



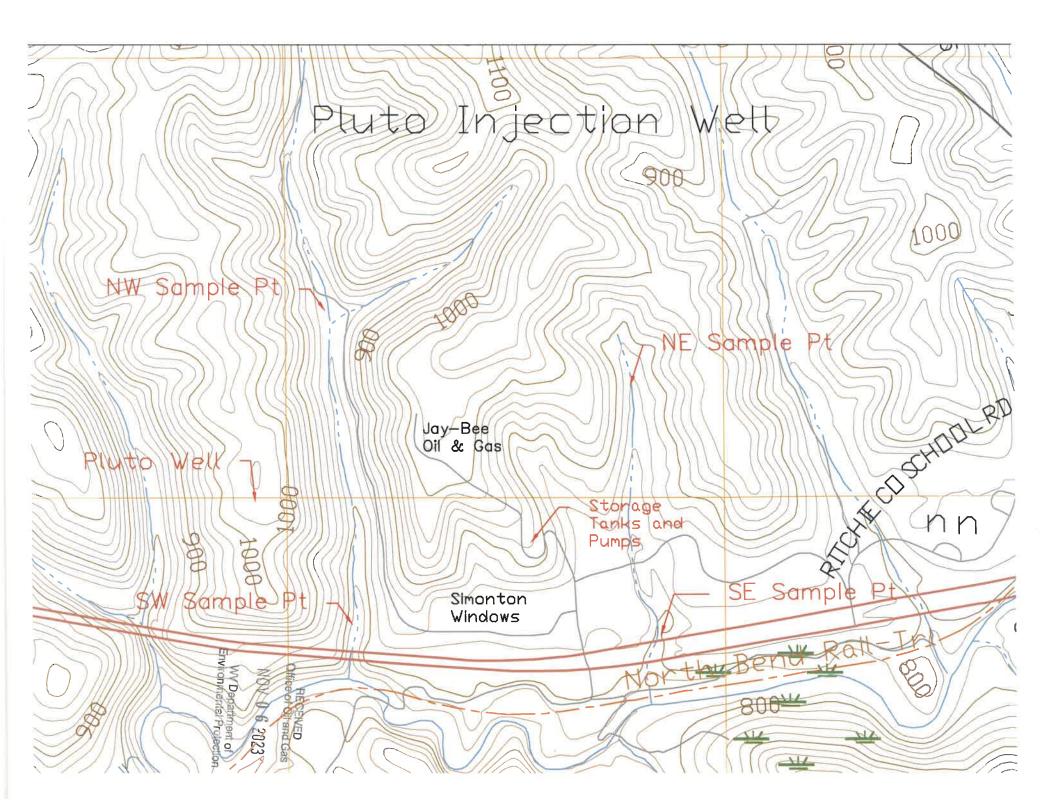
NOV 0 6 2023 WV Department of Environmental Protection

Office of Oil and Gas

Name	Address	Phone	TM/P
Pearl Everett II & Nathaniel Lyle Mason, or Tenants	P O BOX 235 ELLENBORO WV 26346 0235	304-869-3892	M13 P31, 37.1, 37.2, 38
Harold & Alice Bunner	723 Dogwood Lane	304-869-3710	M13 P37
Bonds Creek Church	Bonds Creek Rd, Ellenboro, WV 26346	304-869-3542	M18 P4
Bonds Creek Youth Center	Bonds Creek Rd, Ellenboro, WV 26346	304-684-7457	M18 P11
Green Hunter	122 Lonesome Pine Rd. Ellenboro, WV 26346	304-374-2251	M18 P11
Fairmont Ridge Church	Bonds Creek & Fairmont Ridge Rd, Ellenboro, WV 26346	none listed	M18 P10
Luther & Julia Collins	RT1 OX 21 KERMIT WV 25674 9703	540-912-9101	M18 P20.3
Ronald L Casto	136 Casto Dr. Ellenboro, WV 26346	304-869-3353	M28 P29.2
Patrick Ray Keith	78 VALLEY MANOR LN WILLIAMSTOWN WV 26187 9781	none listed	M28 P29
Jacob Paul & Donna Griffith	264 Lost Run Rd. Ellenboro, WV 26346	304-869-3514	M28 P5
Steven Allen & John Wesley Seese Life Estate	RT 1 BOX 42 HARRISVILLE WV 26362 9707	none listed	M28 P15
Charles W Cunningham	P O BOX 116 ELLENBORO WV 26346 0235	none listed	M28 P30.1
Camp Hope	601 E MAIN ST HARRISVILLE WV 26362 6313	304-643-2878	M19 P1.1
First Apostolic Church of Harrisville	601 E MAIN ST HARRISVILLE WV 26362 6313	304-643-2878	M28 P1.3
Charles & Penny Copeland	P O BOX 163 ELLENBORO WV 26346 0235	304-869-3053	M28 P61
C&W Logs & Veneer	250 HEBRON RD. ST MARYS. WV. 26170	304-684-9974	M28 P59
David & Patricia Deak	498 Pike Rd. Ellenboro, WV 26346	304-869-3462	M28 P1.2
Bernard McCormick	97 Sellers Lane. Ellenboro, WV 26346	304-869-3329	M28 P2
Simonton Building Products, Inc	1 COCHRANE AVE PENNSBORO WV 26415 9404	304-659-2901	M28 P3
Gerald & Teresa Hall	P O BOX 399 RT 50 W ELLENBORO WV 26346 0399	304-643-2242	M28 P4
Trenton Energy	RT 50, Ellenboro, WV 26346	304-869-3799	M28 P4
Dennis Sellers	303 FIRST ST PENNSBORO WV 26415 1123	304-659-2255	M28 P4.3
Anthony & Anissa Sellers	P O BOX 247 ELLENBORO WV 26346 0235	none listed	M28 P5.1
Kevin & Kathy Jones	PO BOX 334 ELLENBORO WV 26346	none listed	M28 P5
RITCHIE CO BD OF EDUCATION	217 W MAIN ST HARRISVILLE WV 26362 0001	304-643-4136	M2 P86

WV Department of Environmental Protection

Office of Oil and Gas



Pace Analytical Services, LLC 1638 Roseytown Road - Suites 2,3,4 Greensburg, PA 15601 (724)850-5600

Stream Samples

September 20, 2023

Mr. Joshua Cook North Central Engineering, LLC 56 Angler Drive PO Box 628 Bridgeport, WV 26330

RE: Project: JB/Pluto Injection Well Pace Project No.: 30618854

Dear Mr. Cook:

Enclosed are the analytical results for sample(s) received by the laboratory on September 01, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services Beaver
- · Pace Analytical Services Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

+ Mayle Graine &

Nikayla M. Yasurek nikayla.yasurek@pacelabs.com (724)850-5600 Project Manager

Enclosures

cc: Mr. Dennis Fisher, North Central Engineering, LLC

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC 1638 Roseytown Road - Suites 2,3,4 Greensburg, PA 15601 (724)850-5600

CERTIFICATIONS

Project: JB/Pluto Injection Well Pace Project No.: 30618854

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601 ANAB DOD-ELAP Rad Accreditation #: L2417 ANABISO/IEC 17025:2017 Rad Cert#: L24170 Alabama Certification #: 41590 Arizona Certification #: AZ0734 Arkansas Certification California Certification #: 2950 Colorado Certification #: PA01547 Connecticut Certification #: PH-0694 EPA Region 4 DW Rad Florida/TNI Certification #: E87683 Georgia Certification #: C040 **Guam Certification** Hawaii Certification Idaho Certification Illinois Certification Indiana Certification Iowa Certification #: 391 Kansas Certification #: E-10358 Kentucky Certification #: KY90133 KY WW Permit #: KY0098221 KY WW Permit #: KY0000221 Louisiana DHH/TNI Certification #: LA010 Louisiana DEQ/TNI Certification #: 04086 Maine Certification #: 2023021 Maryland Certification #: 308 Massachusetts Certification #: M-PA1457 Michigan/PADEP Certification #: 9991

Pace Analytical Services Beaver

225 Industrial Park Road, Beaver, WV 25813 Virginia VELAP 460148 West Virginia DEP 060 West Virginia DHHR 00412CM

Missouri Certification #: 235 Montana Certification #: Cert0082 Nebraska Certification #: NE-OS-29-14 Nevada Certification #: PA014572023-03 New Hampshire/TNI Certification #: 297622 New Jersey/TNI Certification #: PA051 New Mexico Certification #: PA01457 New York/TNI Certification #: 10888 North Carolina Certification #: 42706 North Dakota Certification #: R-190 Ohio EPA Rad Approval: #41249 Oregon/TNI Certification #: PA200002-015 Pennsylvania/TNI Certification #: 65-00282 Puerto Rico Certification #: PA01457 Rhode Island Certification #: 65-00282 South Dakota Certification Tennessee Certification #: TN02867 Texas/TNI Certification #: T104704188-22-18 Utah/TNI Certification #: PA014572223-14 USDA Soil Permit #: 525-23-67-77263 Vermont Dept. of Health: ID# VT-0282 Virgin Island/PADEP Certification Virginia/VELAP Certification #: 460198 Washington Certification #: C868 West Virginia DEP Certification #: 143 West Virginia DHHR Certification #: 9964C Wisconsin Approve List for Rad

North Carolina DEQ 466 Kentucky Wastewater Certification KY90039 Pennsylvania DEP 68-00839

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC 1638 Roseytown Road - Suites 2,3,4 Greensburg, PA 15601 (724)850-5600

SAMPLE SUMMARY

Project: JB/Pluto Injection Well Pace Project No.: 30618854

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30618854001		Water	09/01/23 09:15	09/01/23 16:25
30618854002	SW	Water	09/01/23 09:40	09/01/23 16:25
30618854003	NE	Water	09/01/23 10:00	09/01/23 16:25
30618854004	SE	Water	09/01/23 10:30	09/01/23 16:25

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REPORT OF LABORATORY ANALYSIS

Pace

SAMPLE ANALYTE COUNT

Project: JB/Pluto Injection Well
Pace Project No.: 30618854

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30618854001		EPA 200.7	MFC	8	PASI-BV
		SM 2540C-2015	BM1	1	PASI-PA
		SM 4500H+B-2011	CMT	1	PASI-PA
		300.0 Rev.2.1, 1993	JLM	3	PASI-PA
30618854002	sw	EPA 200.7	MFC	8	PASI-BV
		SM 2540C-2015	BM1	1	PASI-PA
		SM 4500H+B-2011	CMT	1	PASI-PA
		300.0 Rev.2.1, 1993	JLM	3	PASI-PA
30618854003	NE	EPA 200.7	MFC	8	PASI-BV
		SM 2540C-2015	BM1	1	PASI-PA
		SM 4500H+B-2011	CMT	1	PASI-PA
		300.0 Rev.2.1, 1993	JLM	3	PASI-PA
30618854004	SE	EPA 200.7	MFC	8	PASI-BV
		SM 2540C-2015	BM1	1	PASI-PA
		SM 4500H+B-2011	CMT	1	PASI-PA
		300.0 Rev.2.1, 1993	JLM	3	PASI-PA

PASI-BV = Pace Analytical Services - Beaver

PASI-PA = Pace Analytical Services - Greensburg

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REPORT OF LABORATORY ANALYSIS

Stream Sample

ace

ANALYTICAL RESULTS

Project: JB/Pluto Injection Well

Pace Project No.: 30618854

Sample: NW	Lab ID:	30618854001	Collected	1: 09/01/23	09:15	Received: 09/	01/23 16:25 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
T diditiciois					_				
BVR 200.7 Metals Total		Method: EPA 20		ration Meth	od: EP/	A 200.7			
	Pace Analy	tical Services	- Beaver						
Aluminum	61.6	ug/L	20.0	17.7	1	09/11/23 12:39	09/13/23 03:36		
Arsenic	ND	ug/L	20.0	6.4	1	09/11/23 12:39	09/13/23 03:36		
Barium	45.2	ug/L	5.0	1.4	1	09/11/23 12:39	09/13/23 03:36		
Calcium	16000	ug/L	500	83.1	1	09/11/23 12:39	09/13/23 03:36		
iron	70.2	ug/L	50.0	34.6	1	09/11/23 12:39			
Manganese	32.1	ug/L	5.0	2.7	1	09/11/23 12:39			
Sodium	6340	ug/L	500	345	1	09/11/23 12:39	09/13/23 03:36		
Strontium	123	ug/L	10.0	1.3	1	09/11/23 12:39	09/13/23 03:36	/440-24-6	N2
2540C Total Dissolved Solids	Analytical I	Method: SM 25	40C-2015						
	Pace Analy	tical Services	- Greensbu	rg					
Total Dissolved Solids	139	mg/L	10.0	10.0	1		09/06/23 15:18		
4500H+ pH, Electrometric	Analytical I	Method: SM 45	00H+B-201	11					
	Pace Analy	tical Services	- Greensbu	rg					
pH at 25 Degrees C	7.6	Std. Units	2.0	2.0	1		09/08/23 07:53		H3,H6
300.0 IC Anions 28 Days	Analytical I	Method: 300.0	Rev.2.1, 19	93					
		tical Services							
Bromide	ND	mg/L	0.50	0.28	1		09/08/23 18:54	24959-67-9	
Chloride	7.5	mg/L	0.50	0.48	1		09/08/23 18:54	16887-00-6	
Sulfate	8.4	mg/L	0.50	0.45	1		09/08/23 18:54	14808-79-8	
Guilde									
Sample: SW	Lab ID:	30618854002	Collected	d: 09/01/23	8 09:40	Received: 09/	01/23 16:25 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
DVD 200 7 Netela Total	Analytical	Vethod: EPA 20	007 Prena	ration Meth	od: FP	A 200.7			
BVR 200.7 Metals Total	•	tical Services			о ч . шт				
Aluminum	64.2	ug/L	20.0	17.7	1	09/11/23 12:39	09/13/23 03:42	7429-90-5	
Arsenic	ND	ug/L	20.0	6.4	1	09/11/23 12:39	09/13/23 03:42	7440-38-2	
Barium	59.5	ug/L	5.0	1.4	1	09/11/23 12:39	09/13/23 03:42	7440-39-3	
Calcium	29400	ug/L	500	83.1	1	09/11/23 12:39	09/13/23 03:42	7440-70-2	
Iron	58.4	ug/L	50.0	34.6	1	09/11/23 12:39			
Manganese	6.0	ug/L	5.0	2.7	1		09/13/23 03:42		
Sodium	6160	ug/L	500	345	1		09/13/23 03:42		
Strontium	170	ug/L	10.0	1.3	1	09/11/23 12:39	09/13/23 03:42	7440-24-6	N2
2540C Total Dissolved Solids	Analytical I	Method: SM 25	40C-2015						DEOGN
Total Biggatter course		tical Services		rg				Offic	RECEIVED e of Oil and G
Total Dissolved Solids	129	mg/L	10.0	10.0	1		09/06/23 15:18		
	123	mg/L	.0.0	10.0				NO	V 0 6 202
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								** V	uouuument r

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ANALYTICAL RESULTS

Project: JB/Pluto Injection Well

Pace Project No.: 30618854

Sample: SW	Lab ID:	30618854002	Collected	09/01/2	3 09:40	Received: 09/	01/23 16:25 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500H+ pH, Electrometric		l Method: SM 4 Ilytical Services							
pH at 25 Degrees C	7.6	Std. Units	2.0	2.0	1		09/08/23 07:54		H3,H6
300.0 IC Anions 28 Days		I Method: 300.0 alytical Services							
Bromide	ND	mg/L	0.50	0.28	1		09/08/23 19:28		
Chloride	6.4	mg/L	0.50	0.48	1		09/08/23 19:28		
Sulfate	12.5	mg/L	2.5	2.3	5		09/08/23 19:45	14808-79-8	
Sample: NE	Lab ID:	30618854003	Collected	: 09/01/2	3 10:00	Received: 09/	01/23 16:25 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 200.7 Metals Total		l Method: EPA		ation Met	hod: EP/	A 200.7			
Aluminum	570	ug/L	20.0	17.7	1	09/11/23 12:39	09/13/23 03:44		
Arsenic	ND	ug/L	20.0	6.4	1	09/11/23 12:39	09/13/23 03:44		
Barium	136	ug/L	5.0	1.4	1	09/11/23 12:39	09/13/23 03:44		
Calcium	92400	ug/L	500	83.1	1	09/11/23 12:39	09/13/23 03:44		
Iron	1330	ug/L	50.0	34.6	1	09/11/23 12:39			
Manganese	727	ug/L	5.0	2.7	1	09/11/23 12:39			
Sodium	8110	ug/L	500	345	1	09/11/23 12:39	09/13/23 03:44		10
Strontium	520	ug/L	10.0	1.3	1	09/11/23 12:39	09/13/23 03:44	/440-24-6	N2
2540C Total Dissolved Solids		I Method: SM 2 alytical Services		g					
Total Dissolved Solids	316	mg/L	10.0	10.0	1		09/06/23 15:18		
4500H+ pH, Electrometric	-	I Method: SM 4							
pH at 25 Degrees C	8.1	Std. Units	2.0	2.0	1		09/08/23 07:55		H3,H6
300.0 IC Anions 28 Days		l Method: 300.0 alytical Services							
Bromide	ND	mg/L	0.50	0.28	1		09/08/23 20:02	24959-67-9	
Chloride	7.7	mg/L	0.50	0.48	1		09/08/23 20:02	16887-00-6	
0110100			-						

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ANALYTICAL RESULTS

Project: JB/Pluto Injection Well

Pace Project No.: 30618854

Sample: SE	Lab ID:	30618854004	Collected:	09/01/2	3 10:30	Received: 09/	/01/23 16:25 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 200.7 Metals Total	Analytical	Method: EPA 2	00.7 Prepara	ation Meth	nod: EP/	A 200.7			
	Pace Anal	ytical Services	- Beaver						
Aluminum	156	ug/L	20.0	17.7	1	09/11/23 12:39	09/13/23 03:46	7429-90-5	
Arsenic	ND	ug/L	20.0	6.4	1	09/11/23 12:39	09/13/23 03:46	7440-38-2	
Barium	123	ug/L	5.0	1.4	1	09/11/23 12:39	09/13/23 03:46	7440-39-3	
Calcium	111000	ug/L	500	83.1	1	09/11/23 12:39	09/13/23 03:46	7440-70-2	
Iron	420	ug/L	50.0	34.6	1	09/11/23 12:39	09/13/23 03:46	7439-89-6	
Manganese	1170	ug/L	5.0	2.7	1	09/11/23 12:39	09/13/23 03:46	7439-96-5	
Sodium	20500	ug/L	500	345	1	09/11/23 12:39	09/13/23 03:46	7440-23-5	
Strontium	480	ug/L	10.0	1.3	1	09/11/23 12:39	09/13/23 03:46	7440-24-6	N2
2540C Total Dissolved Solids	Analytical	Method: SM 25	40C-2015						
	Pace Anal	tical Services	- Greensburg						
Total Dissolved Solids	425	mg/L	10.0	10.0	1		09/06/23 15:18		
4500H+ pH, Electrometric	Analytical	Method: SM 45	00H+B-2011						
	Pace Analy	tical Services	Greensburg						
pH at 25 Degrees C	8.0	Std. Units	2.0	2.0	1		09/08/23 07:57		H3,H6
300.0 IC Anions 28 Days	Analytical I	Method: 300.0	Rev.2.1, 1993	3					
	Pace Analy	tical Services -	Greensburg						
Bromide	ND	mg/L	0.50	0.28	1		09/08/23 20:36	24959-67-9	
Chloride	24.9	mg/L	5.0	4.8	10		09/08/23 20:53		
Sulfate	40.3	mg/L	5.0	4.5	10		09/08/23 20:53	14808-79-8	

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REPORT OF LABORATORY ANALYSIS



QUALITY CONTROL DATA

Project:	JB/Pluto Injection	Well										
Pace Project No.:	30618854											
QC Batch:	614511		Analy	sis Metho	d: i	EPA 200.7						
QC Batch Method:	EPA 200.7		Analy	sis Descri	ption: I	BVR 200.7	Metals,	Total				
			Labo	ratory:	I	Pace Analy	tical Serv	rices - Beaver	r			
Associated Lab Samp	ples: 30618854	001, 3061885400	2, 3061885	4003, 306	18854004						0	
METHOD BLANK:				Matrix: W								
Associated Lab Sam	ples: 30618854	001, 3061885400	2, 3061885	4003, 306	18854004							
			Blar		Reporting			6	0	معاناتهم		
Parame	eter	Units	Res	ult	Limit	MD	L	Analyzed	Qi	ualifiers	_	
Aluminum		ug/L		ND	20.	0		09/13/23 03:				
Arsenic		ug/L		ND	20.			09/13/23 03:				
Barium		ug/L		ND	5.			09/13/23 03:				
Calcium		ug/L		ND	50			09/13/23 03:				
Iron		ug/L		ND	50.			09/13/23 03:				
Manganese		ug/L		ND	5.			09/13/23 03: 09/13/23 03:				
Sodium		ug/L		ND	50 10.			09/13/23 03:				
Strontium		ug/L		ND	10.	v	1.5	00/10/20 UU.	00 M2			
LABORATORY CON	TROL SAMPLE:	2991937										
			Spike	LC		LCS		Rec	0			
Parame	eter	Units	Conc.	Res	sult	% Rec			Qualifiers			
Aluminum		ug/L	200	0	2150	10		85-115				
Arsenic		ug/L	200		2100	10		85-115				
Barium		ug/L	200		2150	10		85-115				
Calcium		ug/L	4000		42400	10		85-115 85-115				
Iron		ug/L	200		2170	10		85-115				
Manganese		ug/L	200		2160 21300	10 10		85-115				
Sodium		ug/L	2000 200		21300	10		85-115 N2				
Strontium		ug/L	200	0	2170	10		00 110 112				
MATRIX SPIKE & MA	ATRIX SPIKE DUP	PLICATE: 2991			2991986	3						
		00040040000	MS	MSD	MC	MSD	MS	MSD	% Rec		Max	
Deservator	Units	30618640002 Result	Spike Conc.	Spike Conc.	MS Result	Result	% Rec		Limits	RPD	RPD	Qual
Parameter						3850	13		70-130	8		M1
Aluminum	ug/L	ND	2000 2000	2000 2000	4180 2020	2010		98 97				
Arsenic	ug/L	ND 1220000		2000	1320000	1250000	516					E,M1
Barium	ug/L ug/L		2000 40000	40000		1470000	121					M1
Calcium	uyr	10100000	40000	40000	0	0						
Iron	ug/L	170000	2000	2000	177000	168000	33					M1
Manganese	ug/L		2000	2000	8000	7590	11					5.14
Sodium	ug/L	46200000	20000	20000	5090000	4840000	2350	0 11400	70-130	5	20	E,M1
Strontium	ug/L	5030000	2000	2000	0 4860000	0 4660000	-858	-18500	70-130	4	20	E,M1, N2
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QUALITY CONTROL DATA

Project:	JB/Pluto Injection Well
Pace Project No .:	30618854

MATRIX SPIKE & MATRIX	SPIKE DUP	ICATE: 2991	987		2991988							
Parameter	Units	30620093001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	82.5	2000	2000	2280	2320	110	112	70-130	2	20	
Arsenic	ug/L	<6.4	2000	2000	2180	2210	109	110	70-130	1	20	
Barium	ug/L	86.4	2000	2000	2220	2260	107	109	70-130	2	20	
Calcium	ug/L	101000	40000	40000	138000	143000	93	105	70-130	3	20	
Iron	ug/L	<34.6	2000	2000	2170	2200	108	110	70-130	2	20	
Manganese	ug/L	6.7	2000	2000	2140	2180	107	109	70-130	2	20	
Sodium	ug/L	44000	20000	20000	63500	65600	97	108	70-130	3	20	
Strontium	ug/L	611	2000	2000	2750	2810	107	110	70-130	2	20	N2

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QUALITY CONTROL DATA

Project: Pace Project No.:	JB/Pluto Injection 30618854	Well						
QC Batch:	613415		Analysis Me	ethod:	SM 2540C-20	15		
QC Batch Method:	SM 2540C-2015	i	Analysis De		2540C Total D	issolved Solids		
GO Batan moulou.	0		Laboratory:	·	Pace Analytica	al Services - Gre	ensbu	rg
Associated Lab San	nples: 30618854	001, 30618854002,	30618854003,	30618854004				
METHOD BLANK:	2986014		Matrix	: Water				
Associated Lab Sar	nples: 30618854	001, 30618854002,	30618854003,	30618854004				
	•		Blank	Reporting				
Paran	neter	Units	Result	Limit	MDL	Analyz	ed	Qualifiers
Total Dissolved Soli	ds	mg/L	ND	10	.0	10.0 09/06/23	15:18	
		Ŭ						
LABORATORY CON	NTROL SAMPLE:	2986015						
Dibbliot totti oot			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Soli	ds	mg/L	1000	980	98	85-115		
SAMPLE DUPLICA	TE: 2986016							
-			30618086001	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	607	62	21	2	5	
SAMPLE DUPLICA	TE: 2986017		00040005004	Dur		Мах		
F		11.25	30619035001	Dup	RPD	Max RPD		Qualifiers
Parar	neter	Units	Result	Result			_	
Total Dissolved Soli	ds	mg/L	1150	116	60	1	5	

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Pace Analytical Services, LLC 1638 Roseytown Road - Suites 2,3,4 Greensburg, PA 15601 (724)850-5600

QUALITY CONTROL DATA

Project:	JB/Pluto Injection W	etl							
Pace Project No.:	30618854								
QC Batch:	614079		Analysis Meth	od:					
QC Batch Method:	SM 4500H+B-2011		Analysis Desc	ription:	4500H+B pH				
			Laboratory:		Pace Analytica	Services -	Greens	sburg	
Associated Lab Sar	nples: 3061885400)1, 306188540	02, 30618854003, 30	618854004					
SAMPLE DUPLICA	TE: 2989873		30618640004	Dup		м	ax		
Parar		Units	Result	Result	RPD		PD	Qualifiers	
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QUALITY CONTROL DATA

	040400		Analysis Met	hod:	300.0 Rev.2.1, 1	993		
QC Batch:	613489		Analysis Met		300.0 IC Anions			
QC Batch Method:	300.0 Rev.2.1, 1	1993		cription.		Services - Greens	shura	
			Laboratory:	0040054004		Belvices - Oreen	buig	
Associated Lab Sa	imples: 30618854	4001, 30618854002,	30618854003, 3	0010004004				
METHOD BLANK:	2986340		Matrix:	Water				
Associated Lab Sa	mples: 30618854	4001, 30618854002,	30618854003, 3	0618854004				
			Blank	Reporting				
Para	imeter	Units	Result	Limit	MDL	Analyzed	Qualifier	S
Bromide		mg/L	ND	0.	50 0.2			
Chioride		mg/L	ND	0.	50 0.4			
Sulfate		mg/L	ND	0.	50 0.4	15 09/08/23 13:	03	
LABORATORY CO	ONTROL SAMPLE:	2986341						
			Spike	LCS	LCS	% Rec		
Para	meter	Units	Conc. F	Result	% Rec	Limits	Qualifiers	
Bromide		mg/L	2	2.0	99	90-110		
Chloride		mg/L	2	1.9	93	90-110		
Sulfate		mg/L	2	1.9	96	90-110		
MATRIX SPIKE S	AMPLE:	2990344						
			30618548001	Spike	MS	MS	% Rec	
Para	meter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Bromide		mg/L	5.0	U 20	20.3	90	90-110	
Chloride		mg/L	7:	30 1000) 1620	89	90-110	ИL
Sulfate		mg/L	53	32 1000) 1450	91	90-110	
SAMPLE DUPLIC	ATE: 2990345							
			30618548001	Dup		Max	0.11	
Para	ameter	Units	Result	Result	RPD	RPD	Qualifiers	
Bromide		mg/L	5.0 U	1	١D) D3	
Chloride		mg/L	730		28	0 20		
		mg/L	532	5	34	0 20	C	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result. NOV 0 6 2023

WV Department of Environmental Protection

REPORT OF LABORATORY ANALYSIS



Pace Analytical Services, LLC 1638 Roseytown Road - Suites 2,3,4 Greensburg, PA 15601 (724)850-5600

QUALIFIERS

Project:	JB/Pluto Injection Well
Pace Project No.:	30618854

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- H3 Sample was received or analysis requested beyond the recognized method holding time.
- H6 Analysis initiated outside of the 15 minute EPA required holding time.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

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REPORT OF LABORATORY ANALYSIS



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JB/Pluto Injection Well Pace Project No.: 30618854

Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
	EPA 200.7	614511	EPA 200.7	615009
SW	EPA 200.7	614511	EPA 200.7	615009
NE	EPA 200.7	614511	EPA 200.7	615009
SE	EPA 200.7	614511	EPA 200.7	615009
NW	SM 2540C-2015	613415		
SW	SM 2540C-2015	613415		
NE	SM 2540C-2015	613415		
SE	SM 2540C-2015	613415		
NW	SM 4500H+B-2011	614079		
SW	SM 4500H+B-2011	614079		
NE	SM 4500H+B-2011	614079		
SE	SM 4500H+B-2011	614079		
NW	300.0 Rev.2.1, 1993	613489		
SW	300.0 Rev.2.1, 1993	613489		
NE	300.0 Rev.2.1, 1993	613489		
SE	300.0 Rev.2.1, 1993	613489		
	NW SW NE SE NW SW NE SE NW SW NE SE NW SW NE SE NW	NW EPA 200.7 SW EPA 200.7 NE EPA 200.7 SE EPA 200.7 NW SM 2540C-2015 SW SM 2540C-2015 SW SM 2540C-2015 SW SM 2540C-2015 NE SM 2540C-2015 SE SM 2540C-2015 NE SM 2540C-2015 SE SM 4500H+B-2011 SW SM 4500H+B-2011 SE SM 4500H+B-2011 SE SM 4500H+B-2011 NE SM 4500H+B-2011 SE SM 4500H+B-2011 NE SM 4500H+B-2011 NE SM 4500H+B-2011 NE SM 4500H+B-2011 NE 300.0 Rev.2.1, 1993 SW 300.0 Rev.2.1, 1993 NE 300.0 Rev.2.1, 1993	NW EPA 200.7 614511 SW EPA 200.7 614511 NE EPA 200.7 614511 SE EPA 200.7 614511 SE EPA 200.7 614511 SE EPA 200.7 614511 SE EPA 200.7 614511 NW SM 2540C-2015 613415 SW SM 2540C-2015 613415 SE SM 4500H+B-2011 614079 SW SM 4500H+B-2011 614079 SE SM 4500H+B-2011 614079 SE SM 4500H+B-2011 614079 NW 300.0 Rev.2.1, 1993 613489 SW 300.0 Rev.2.1, 1993 613489 NW 300.0 Rev.2.1, 1993 613489	NW EPA 200.7 614511 EPA 200.7 SW EPA 200.7 614511 EPA 200.7 NE EPA 200.7 614511 EPA 200.7 SE EPA 200.7 614511 EPA 200.7 SW SM 2540C-2015 613415 EPA 200.7 SW SM 2540C-2015 613415 SW SE SM 2540C-2015 613415 SW SE SM 2540C-2015 613415 SW SE SM 4500H+B-2011 614079 SW SW SM 4500H+B-2011 614079 SW NE SM 4500H+B-2011 613489 SW SW 300.0 Rev.2.1, 1993 613489 SW NW 300.0 Rev.2.1, 1993 613489 SW NW 300.0 Rev.2.1, 1993

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REPORT OF LABORATORY ANALYSIS

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MU#: 3U018854		12065 Lebanon Rd Mount Murt H 77122	Phone: 615-759-588-5858 Alle 800-767-5859 Submitting a sumple via this chain of custody	constitutes acharowiedgment and acceptance of the Pace Terms and Conditions found at: httms://Infin.pacekalna.com/htub/(voue	standard-terms.pdf	SDG#	Table #	Accinome	Template:	Preiogin:	PM:	Chronical Vitati	Remarks Sample # (lab only)						Received by Pace Beaver	herm ID Corr Factor +1	Receipt Temp	Correct Preservation V/N	Sample Receipt Checklist COC Seal Present/Intact: <u>NPYN</u> COC Signed/Accurate:YN	ין א א	Sufficient volume sent: <u>Y</u> _N <u>If Applicable</u> VOB Zero Headeance	Preservition Correct/Checked: <u>Y</u> N RAD Screen <0.5 mL/hr: <u>Xr</u> N	If preservation required by Login: Date/Time	Hold: Condition: NGF / OK	Ricely's Del. Service and a
:#OM	Analysis / Container / Pres additional and a social additional additionadditionadditional additional additionadditionad	Brumide	Strontium	Barium	Iron	Manganese	Aluminum	Arsenic	Sodium	Calcium	Sulfate	Hd	Total Dissolved Solids (TDS)			au C			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	国家の 国家の 国家の 王	Temp		pHTemp	Flow Other		9/1/2_3 Trip Blank Received: Yes / No 12:33	temp: /, デ・C Bottles Received:	Date Time: G(1)33, (C:2.5	rice 9-S-13-21
	Pres			1	e						Results Needed No.		Date Time Cutrs	1-23 9:15 3	5 02/2	1 (0:00 3	1 (oizo 3	AGES (P							Tracking #	Received by: (Signature) LSMM / PAUE	Received by: (Stenature)	Received for lab by. (Signature)	Nicely's-De
	Billing Information: Same		Email To: Jcook@northcentralengineering.com	City/State Ritchle/ WV	Collected:	Lab Project #		P.O.#	n Notifical) Ouote #		_ 5 Day (Rad Only) Date R _ 10 Day (Rad Only)		Matrix* Depth [1-6 10-1		10 U	4 6								a. Courler	te: Time: 9-1-23 12:13	<u> </u>	Time: 16.35	120
	ing, LLC					Client Project # JB		Site/Facility ID #	Brieh? Back Miltor Ba Matibal	Same Day Flv	Next Day5 D	-	Comp/Grab N	Grab	۱۰		1 11						Remarks:		Jups returned via:	å	Date: 9/1/23	9/1/23	50-5-0
	Company Name/Address: North Central Engineering, LLC P.O. Box 628 Bridgeport, WV 26330		Report to: Joshua Cook	Project Description:	JB/Pluto Injection Well	Phone: 3042991583		Collected by (print): Joshua Cook	Collected by (signature):	an -			Sample ID	NW	SW	NE	S Ei						* Matrix: 55 - Soil AlR - Air F - Filter GW - Groundwater B - Bioassev			0 a		Relinquished Bit (Signature)	later

LIO#: 30618854

D	DC#_Title: ENV-FRM- Pittsburgh	GBUI	2-008	88 v0		00 Upon Receipt-
/Pace	Effective Date: 07/06/2023				PM: NMY	Que Date: 09/26/2
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		u com	meru	di DQ P		Examined By: 17 9-523
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ustody Seal or	Cooler/Box Present: 🛛 🛛 Ye	s 🕅 N	0		ntact: 🛛 Yes 🕅 No	Labeled By: <u>LA 9-5-23</u>
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ooler Tempera		5	°C	Corre	tion Factor: -10.0	_•C Final Temp: <u>13</u> •C
mp should be abo	ove freezing to 6°C				utt mennen t still	D.P.D. Residual Chlorine Lot #
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	samples field filtered:			X	13.	a de la constante de la constan
ganic Samples	checked for dechlorination			X	14:	
tered volume	received for dissolved tests:			X	15:	
	necked for preservation:	X			16.	
exceptions:	VOA, coliform, TOC, O&G,					
Phenolics, R	adon, non-aqueous matrix					
containers m	eet method preservation	X			Initial when A	Date/Time of Preservation
requirement	ts:	1			Lot# of added	1 1 descritation
				1.	Preservative	
	pace in VOA Vials (> 6mm)			X	17.	and the second se
1.1: Headspace	e in VOA Vials (0mm)			X	18.	
	at-			X	Trip blank custody	/ seal present? YES or NO
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o Blank Preser		- X	1 3	- 1	14	TTU CAL NOS
and the second se	cencu solo interny int	6	1000		completed WT	1. C [3N. 3 26]

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office. PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Office of Oil and Gas

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Qualtrax ID: 55680

Page 1 of 1

WV Department of Environmental Protection

					C	offman Unit	
Tract	Lessors	Map	Parcel	Net AC per JB	Net AC per Antero	Differences	Notes:
D301	Seese Family	11	14	21.3000	21,300	-	We found no discrepanies between JB and Antero Net AC.
D304B1A	Charles Dennison Trust	11	7	13.0000	13.000		We found no discrepanies between JB and Antero Net AC.
D302	Hammett Land and Minerals, LLC	11	15,16,32	6.5625	21.966	-15-4035	JB found that the Hammett Land LLC is being overcredited by Antero on Net AC.
D302	Keith C. and Phyllis J. Smith	11	15,16,32	4.1667	6.2505	-2.0838	Jb found that the Smiths are being overcredited by Antero on Net AC.
D302	Ronald Smith	11	15,16,32	1.3889	1.0417	0.3472	JB found Mr. Smith is being under credited by Antero on Net AC.
D302	Roger Smith	11	15,16,32	1.3889	1.0417	0.3472	JB found Mr. Smith is being under credited by Antero on Net AC.
D302	Rhonda Johnson	11	15,16,32	1,3889	1.0417	0.3472	JB found Mrs. Johnson is being under credited by Antero on Net AC.
D302	Alta Boyce	11	15,16,32	1.0417	0	1.0.417	Missing from Antero Assignment.
D:102	Gordon Myers	11	15,16,32	4.1667	0	4.1667	Missing from Antern Assignment
D302	Peggy Jo Criss	11	15,16,32	2.0830	2.0287	0.0543	JB Leased in 2023; Held by CHK
D302	Dorothy Oldham Harrison	11	15,16,32	0.0000	1.375	-1.375	Needing documentation showing interest in tract.
D302	Rosanna Gail Criner	11	15,16,32	0.0000	·	-	Needing documentation showing interest in tract
D302	Teresa S. Oldham	11	15,16,32	0.0000	-	-	Needing documentation showing interest in tract.
D302	Sonja Lee Kokosky	11	15,16,32	0.0000	-	-	needing documentation showing interest in tract.
D302	Carole Oldham Hyre	11	15,16,32	0.0000			Needing documentation showing interest in tract.
D302	Edward Troy Oldham	11	15,16,32	0.0000	-		Needing documentation showing interest in tract.
W237	Phyllis C. Greathouse	11	5	0.0340	0	0.034	Tract musting from Astero Asognment and JOA Termination.
W237	Norma Jean Dotson	11	5	0.0340	0	0.034	Tract missing from Antoro Assignment and JOA Termination.
W237	Mary C. Dotson	11	5	0.0340	0	0.034	Tract missing from Antern Assignment and JOA Termination.
W237	Kenneth D. Fowler	11	5	0.0340	0	0.034	Tract massing from Antero Assignment and JOA Termination.
W237	Dianna Lauer	11	5	0.0340	0	0.044	Tract missing from Antero Assignment and JOA Termination
			TOTALS:	56.6573	69.045		Governing Docs from JB says we should be assigned 56.657 from Antero for JOA to be accurately terminated.

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Section 8 - Geological Data on the Injection and Confining Zone

EXHITSITS FROM ORIGINAL APP

DESCRIPTION OF INJECTION ZONES

WELL NAME:Pluto #1APERMIT:47- 85-XXXXX (new permit)COUNTY:RitchieDISTRICT:ClayQUADRANGLE:Ellenboro 7.5 minute

POTENTIAL ZONE ONE

ORISKANY SAND:

Formation Description:

Oriskany Sandstone. Lower Devonian. Oriskany Series. A prominent ridge-forming sandstone in eastern West Virginia and an important producer of natural gas across the state. It is a target for gas exploration in many parts of the state. Some of the largest gas fields in West Virginia, including Elk-Poca in Jackson County and South Burns Chapel in Monongalia and Preston counties. Sand may be altered by secondary dolomitization of the limestone post deposition. This is where it will appear brown to gray. It can be calcareous to with a small amount of calcium carbonate. It is a quartz-rich sandstone known as an arenite. The sand will be fine to medium grained. In some locations, it can be cherty in the top and may also contain some glauconite at the top of the formation with traces of pyrite throughout. laces it can be all quartz with secondary quartz cementing the grains. However, on some rare occasions the sand grains of the Oriskany are often held only loosely together. It can be productive when discovered needs on a structural high. This makes the Oriskany useful as a source of silica for glass making as well as a natural gas reservoir.

Stratigraphic Description:

The Oriskany Sandstone was deposited about 300 feet below the top of the Onondaga Limestone, which consists of a limestone (Onondaga) and a cherty-limestone or chert (Huntersville). The Oriskany is near the base of the Devonian Era. It was deposited on top of the Helderberg Formation, the basal Devonian. There is no evidence of faulting from the existing data available at this time.

Log Description:

This sandstone will have a low gamma ray, less than 40 units, with a low density and a low neutron density. The formation porosity is likely to peak at 5%, while the permeability is anticipated not to exceed 30 milidarcy.

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WV Department of Environmental Protection **Depositional Environment:**

Deposited early in the Devonian Period, 400 million to 345 million years ago. Close observation of the Oriskany reveals layers of crossbedding, as well as thin interbedded layers of limestone. One of its most recognizable feature may be thin layers containing fossil molds.

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DESCRIPTION OF INJECTION ZONES

WELL NAME:Pluto #1APERMIT:47- 85-XXXXX (new permit)COUNTY:RitchieDISTRICT:ClayOUADRANGLE:Ellenboro 7.5 minute

POTENTIAL ZONE TWO

HELDERBERG FORMATION:

Formation Description:

Helderberg Formation. Basal Devonian. This formation is from 200 to 460 feet thick and is composed of several gradational formations, which are difficult to distinguish from one another due to gradational boundaries:

Licking Creek Limestone Member - Medium gray, medium-grained, medium-bedded limestone, interbedded with chert; fossiliferous; these series of named and unnamed formation range in thickness 15 to 30 feet:

New Creek Limestone Member - Medium gray, thick-bedded, coarse-grained limestone; fossiliferous; thickness 9 to 10 feet. Medium gray, medium-grained limestone near top; bedded black chert and thin-bedded limestone in middle; silty argillaceous limestone and shale near base; contains tongues of Shriver and Mandata; The overall thickness of this interval can be 110 feet:

Mandata Shale Member - Dark brown to black, thin-bedded shale; fossiliferous; thickness 20 to 30 feet in the study region:

Corriganville Limestone Member (Head) - Limestone can grade to a calcarous sandstone; thickness 10 to 18 feet.; and,

Keyser Limestone - Dark gray, irregular bedding from thin to thick intervals, fine- to coarsegrained calcarenite; contains nodular limestone, dolomitic limestone, and calcarous shale; cherty near top; fossiliferous.

Stratigraphic Description:

The top of this formation was deposited directly under the base of the Oriskany Sandstone. Since it is a limey deposit within a limestone sequence it may contain several different formations, including but not limited to New Creek Limestone, Mandata Shale, Corriganville Limestone, and the Keyser Limestone. Therefore, because of the common characteristics and appearance of these formations range in thickness from about 200 feet to almost 460 feet thick. The Helderbergeceived Office of Oil and Gas

NOV 0 6 2023

WV Department of Environmental Protection Formation was deposited on the Tonoloway Formation from the Salina Group. There is no evidence of faulting from the existing data available at this time.

Log Description:

This series of limestones and shale will have a low gamma ray, less than 30 units, with a low density and a low neutron density. The conglomerate of all of these formations, it is likely that the highest porosity to be 4%, while the highest anticipated permeability is unlikely to exceed 20 milidarcy. Intervals of porosities and permeabilities are created or enhanced by natural occurring fractures.

Depositional Environment:

These formations were deposited in a deep water environment with a limited amount of fine grained sediments. The result was mostly limestones with a few shaly intervals.

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DESCRIPTION OF INJECTION ZONES

WELL NAME:Pluto #1APERMIT:47- 85-XXXXX (new permit)COUNTY:RitchieDISTRICT:ClayQUADRANGLE:Ellenboro 7.5 minute

POTENTIAL ZONE THREE

NEWBERG SAND (WILLIAMSPORT SANDSTONE):

Formation Description:

Newberg Sandstone (Williamsport Sandstone). Middle to Upper Silurian; The Bloomsburg Group; This formation is a resistant quartz-rich sandstone or a granular to vuggy dolomite, which weathers light brown. Eroded surface is greenish-brown, while fresh surfaces may be white or chalky. The formation is composed of carbonate or quartz sand along an erosional surface and later lithified to porous and permeable sandstone; Be aware of sour gas while drilling through interval.

Stratigraphic Description:

This sandstone was deposited at the base of the "Big Lime" Sequence, which begins with Onondaga Limestone. The sandstone was deposited on top of the Niagara Group with almost always begins with a shale. There is no evidence of faulting from the existing data available at this time.

Log Description:

This sandstone will have a low gamma ray, less than 40 units, with a low density and a low neutron density. The highest anticipated porosity is about 7% with an anticipated permeability of at most 50 milidarcy. A fracture-induced porosity along thrust faults developed during the Alleghenian orogeny;

Depositional Environment:

This sand deposit reflects a brief raise to a relatively shallow depositional environment before it slowly reseeds back down. At some localities a zone of ostracods can be found at the base but more often the formation contains dissolution of fossils within Silurian reef complexes;

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DESCRIPTION OF CONFINING ZONE

WELL NAME:Pluto #1APERMIT:47- 85-XXXXX (New Permit)COUNTY:RitchieDISTRICT:ClayQUADRANGLE:Ellenboro 7.5 minute

ONONDAGA FORMATION

Confining Laver for: Oriskany Sandstone

Formation Description:

This formation is likely between 180 feet to 280 feet thick. It is composed of limestone and/or a cherty-lime or limestone. Lower Devonian carbonate platform facies, this limestone sequence can also be gray or grayish-blue compact crystalline or crinoidal limestone. May also have some calcareous fine-grained sandstone at its base grading into the Oriskany readily recognized by peculiar mineral characters and fossils. The formation may also have some of fine-grained, dark gray arenaceous rock with well developed slaty cleavage. There is no evidence of faulting from the existing data available at this time. This is an excellent confining layer.

Primary Rock Type: Limestone

Secondary Rock Type: Chert

Log Description:

This limestone will have a low gamma ray, less than 30 units, with a low density and a low neutron density. The formation porosity is likely to peak at 2%, while the permeability is anticipated not to exceed 10 milidarcy.

Depositional Environment:

Lower Devonian. This formation was deposited as a calcarenitic to cherty to argillaceous limestones and minor shales deposited in a shallow epicontinental sea.

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DESCRIPTION OF CONFINING ZONE

WELL NAME:	Pluto #1A
PERMIT:	47-85-XXXXX (New Permit)
COUNTY:	Ritchie
DISTRICT:	Clay
QUADRANGLE:	Ellenboro 7.5 minute

HELDERBERG FORMATION:

Bottom Confining Layer for: Oriskany Sandstone and Helderberg Formation

Formation Description:

Helderberg Formation. Basal Devonian. This is an excellent confining layer. This group has a total in interval thickness 200 to 460 feet and is composed of several gradational formations, described as follows:

Licking Creek Limestone Member - Medium gray, medium-grained, medium-bedded limestone, interbedded with chert; fossiliferous; these series of named and unnamed formation range in thickness 15 to 30 feet:

New Creek Limestone Member – The formation is 9 to 10 feet thick, composed medium gray, thick-bedded, medium to coarse-grained limestone; fossiliferous; Medium gray, limestone near top; bedded black chert and thin-bedded limestone in middle; silty argillaceous limestone and shale near base; contains tongues of Shriver and Mandata. Total interval thickness is 110 feet:

Mandata Shale Member – It is anticipated this formation is thickness 20 to 30 feet in west, dark brown to black, thin-bedded shale and fossiliferous can be within the New Creek Limestone:

Corriganville Limestone Member - This formation is anticipate to be about 10 to 18 feet thick. Predominately a limestone with a fine to medium grain calcareous limestone:

Keyser Limestone - Dark gray, irregular bedding thickness, fine to coarse-grained calcareous, contains nodular limestone, dolomitic limestone, and calcareous shale; cherty near top fossiliferous.

There is no evidence of faulting from the existing data available at this time. This is an excellent confining layer.

Primary Rock Type: Limestone

Secondary Rock Type: None

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Stratigraphic Description:

The Siluro-Devonian Helderberg Group is a carbonate interval stratigraphically between these two units. It has minor interbedded silici-clastics and chert with minor interbedded. The top of this formation was deposited directly under the base of the Oriskany Sandstone. Since it is a limey deposit within a limestone sequence consisting of several different formations, including but not limited to New Creek Limestone, Mandata Shale, Corriganville Limestone, and the Keyser Limestone. The Helderberg Formation was deposited on the Tonoloway Formation or formation within the Salina Group.

Log Description:

This series of limestones and shale will have a low gamma ray, less than 30 units, with a low density and a low neutron density. The conglomerate of all of these formations, it is likely that the highest porosity to be 5%, which could be a completed interval for injection. Most of the interval will have porosities of less than 3%. The highest anticipated permeability is unlikely to exceed 20 milidarcy, even in the area of completion.

Depositional Environment:

These formations were deposited in a deep water environment with varying sediments. The result was mostly limestones with a few shaly intervals. The Helderberg was deposited in an ancient epeiric sea.

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NOV 0 6 2023

CONFINING LAYER

WELL NAME:Pluto #1APERMIT:47- 85-XXXXX (New Permit)COUNTY:RitchieDISTRICT:ClayQUADRANGLE:Ellenboro 7.5 minute

SALINA LIMESTONE

Top Confining Layer for: Newberg Sandstone

Formation Description:

Salina Group (Silurian): This group is composed of a series of formations, including limestone, calicites, dolomites to anhydrites. In some cases, there is even includes some minable salts deposited between the dolomites and the anhydrites. It should be noted that these salts can be very plastic within the rocks resulting in the formation acting as a sealant zone. It is unlikely that the salt beds were deposited this far southwest. These formations will vary from dolomitic, gray, yellow-gray to olive-gray, sometimes can be very dark almost black. Formations can be laminated to thin bedded; occasional thin bed and laminae of dark gray shale and anhydrite and/or gypsum; brecciated zones in part. There is no evidence of faulting from the existing data available at this time. This is an excellent confining layer.

Besides the Salina formations there are two Keyser and Tonoloway Formations, undivided - In descending order: Keyser Formation is a medium-gray, crystalline to nodular, fossiliferous limestone; and, the Tonoloway Formation is a medium-gray, laminated, mud-cracked limestone containing some medium-dark- or olive-gray shale interbeds. The lower part passes into Wills Creek Formation east and south.

Primary Rock Type: Limestone

Secondary Rock Type: Dolomite and Anhydrites

Depositional Environment:

These formations were deposited in a continuous deep sea, leaving many of them easily identified and relatively continuous across the basin, and they contain beds of dark gray to black shale and (or) black argillaceous limestone and dolomite.

Stratigraphic Description:

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The uppermost 60 feet of the Silurian, Salina Group contains a variety of limestones. Lower most is in direct contact with the Wills Creek which is probably conformable. Upper contact is conformable and undulatory, occurring at the base of the "calico" limestone of the Keyser Formation. This section of the Silurian contains Upper Silurian, Salina Group, including Wills Creek Formation and Tonoloway Limestone.

Log Description:

This series of limestones and shale will have a low gamma ray, less than 30 units, with a low density and a low neutron density. The conglomerate of all of these formations, it is likely that the highest porosity to be 3%, while the highest anticipated permeability is unlikely to exceed 20 milidarcy.

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CONFINING LAYER

WELL NAME:Pluto #1APERMIT:47- 85-XXXXX (New Permit)COUNTY:RitchieDISTRICT:ClayQUADRANGLE:Ellenboro 7.5 minute

NIAGARA SERIES

Bottom Confining Laver for: Newberg Sandstone

Formation Description:

Lockport Group - Lockport Dolomite: Silurian Era, Niagara Series, Eramosa Member

The Niagara Series is composed of a group of formations, including limestone, calicites, dolomites to anhydrites. In some cases there is even salts deposited between the dolomites and the anhydrites. Dolomite, gray, yellow-gray to olive-gray, sometimes can be very dark almost black. Formation can be laminated to thin bedded; occasional thin bed and laminae of dark gray shale and anhydrite and/or gypsum; brecciated zones in part. There is no evidence of faulting from the existing data available at this time. This is an excellent confining layer.

Primary Rock Type: Limestone

Secondary Rock Type: Shale

Depositional Environment:

These formations were deposited in a continuous deep sea, leaving many of them easily identified and relatively continuous across the basin,

Stratigraphic Description:

The revised Lockport or Eramosa consists of massive, pale brownish-weathering, vuggy, nearly pure biostromal dolomite at the top with intervals of sparsely fossiliferous, medium-bedded, flaggy-weathering, brownish-gray, bituminous dolomite and stromatolite bioherms. This formation grades from calcareous shales to thin beds of limestone or dolomites. There can be some coarse crystalline intervals with the middle to lower sections. This formation can be divided into six informal units:

Unit A is about 8 feet thick, massive, biostromal dolomite characterized by thickets of ramose tabulate coral and abundant white chert nodules.

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Unit B is about 20 feet thick, fine-grained, sparsely fossiliferous and bituminous dolomite that weathers medium-bedded to flaggy.

Unit C is similar to unit A, consists of tabulate coral biostromes and masses of stromatolites. It is massive or thick-bedded, brownish-weathering, saccroidal dolomite with large vugs.

Unit D is about 17 feet thick flaggy, it is weathered, dark brownish-gray, non-fossiliferous, saccroidal dolomite with a middle massive interval that contains coral.

Unit E is about 2 feet thick marker bed of light-gray, laminar, stromatolitic dolomite.

Unit F is similar to unit D, is about 8 feet thick composed of medium-grained, olive-gray dolomite that locally contains scattered onlites and corals.

The total thickness of the Eramosa is about 50 feet.

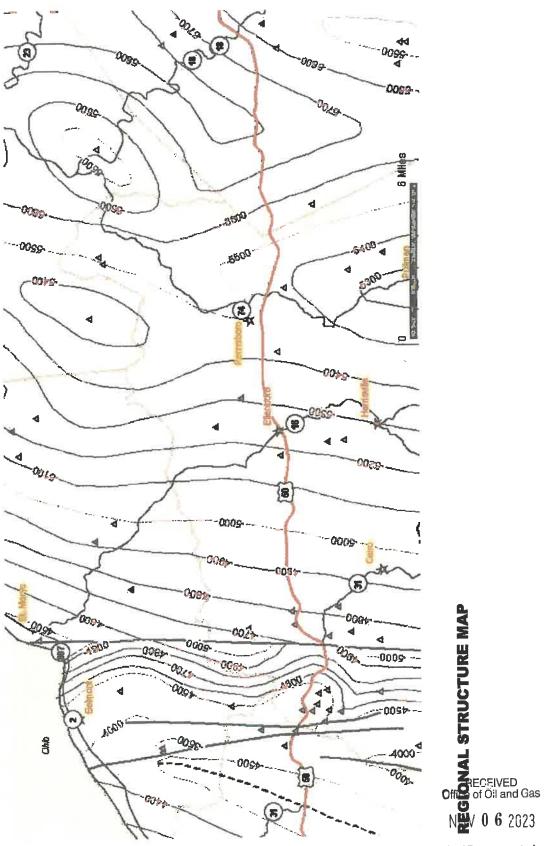
Log Description:

This series of limestones and shale will have a low gamma ray, less than 50 units, with a low density and a low neutron density. The conglomerate of all of these formations, it is likely that the highest porosity to be 4%, while the highest anticipated permeability is unlikely to exceed 20 milidarcy.

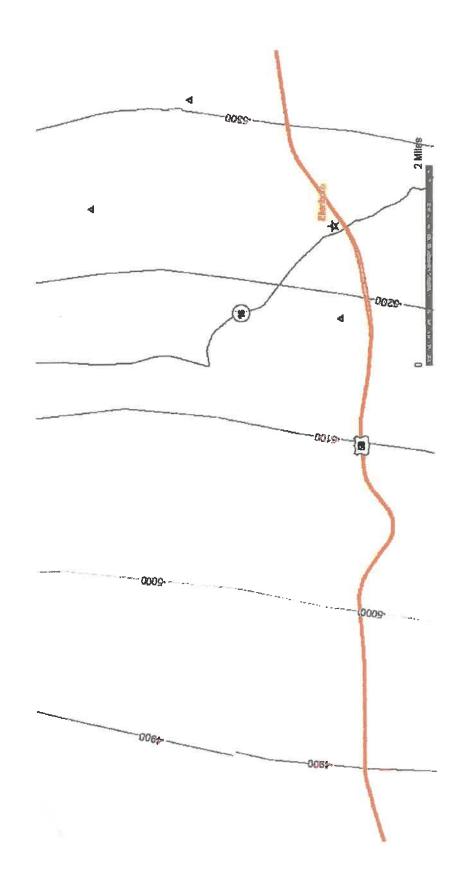
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STRUCTURE MAP BASED ON THE TOP OF THE ONONDAGA FROM WVGS WEBSITE

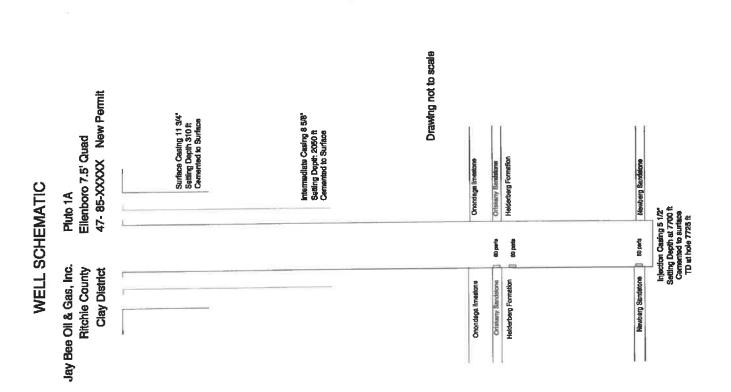








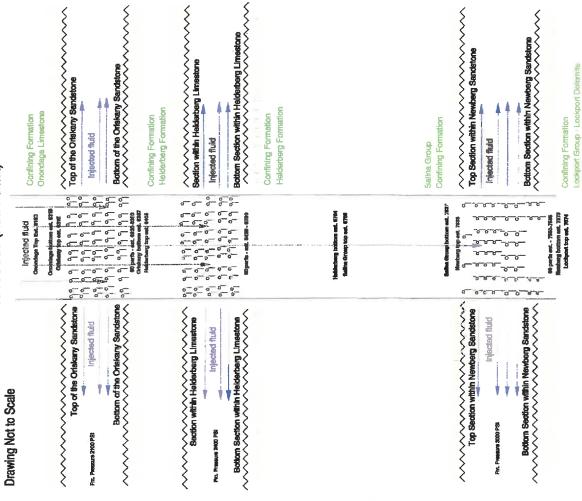
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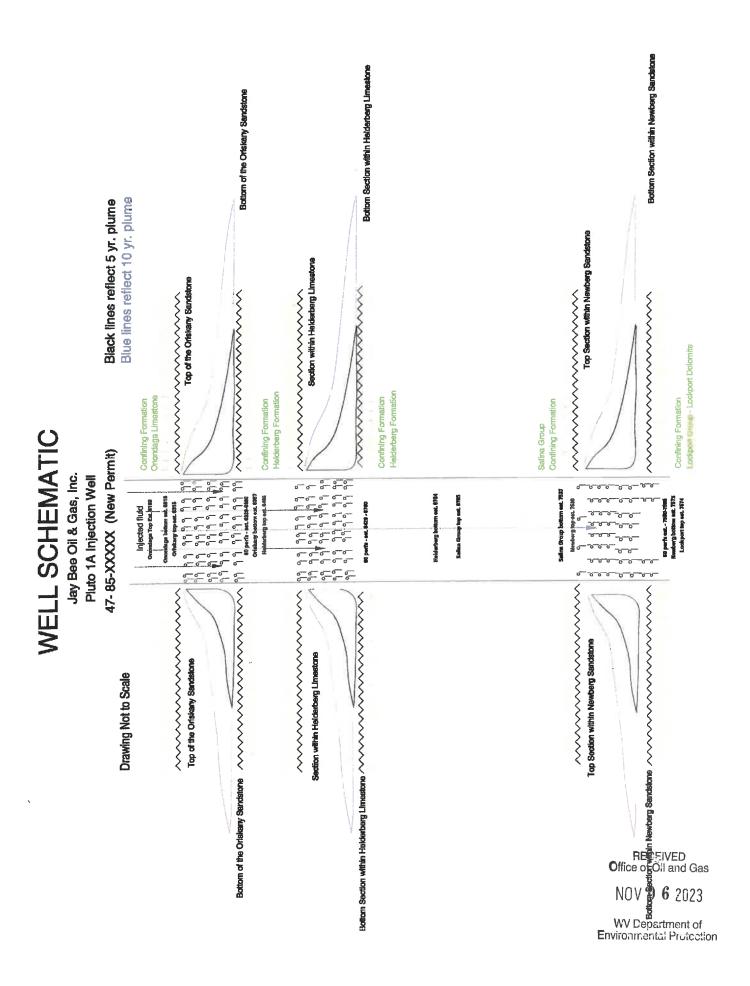
WELL SCHEMATIC

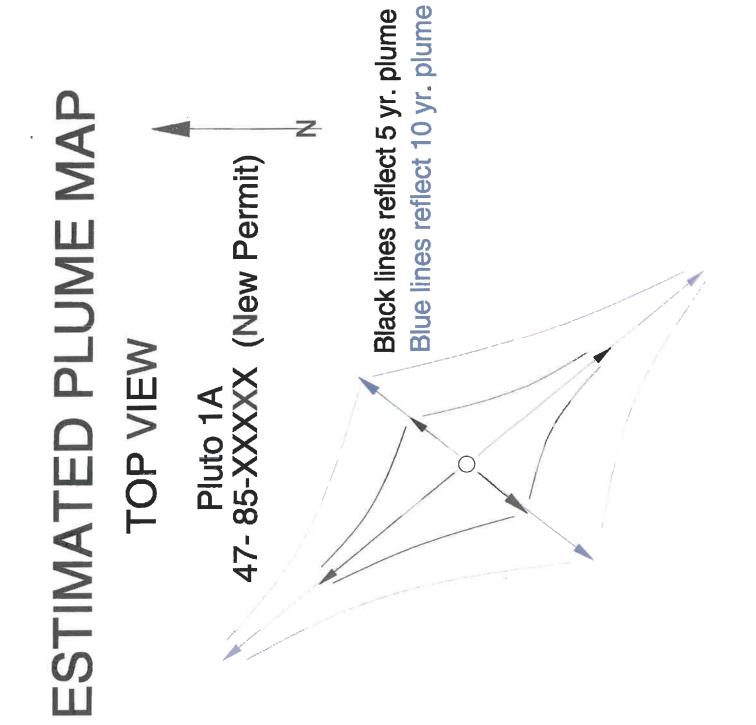
47-85-XXXXX (New Permit) Jay Bee Oil & Gas, Inc. Pluto 1A Injection Well



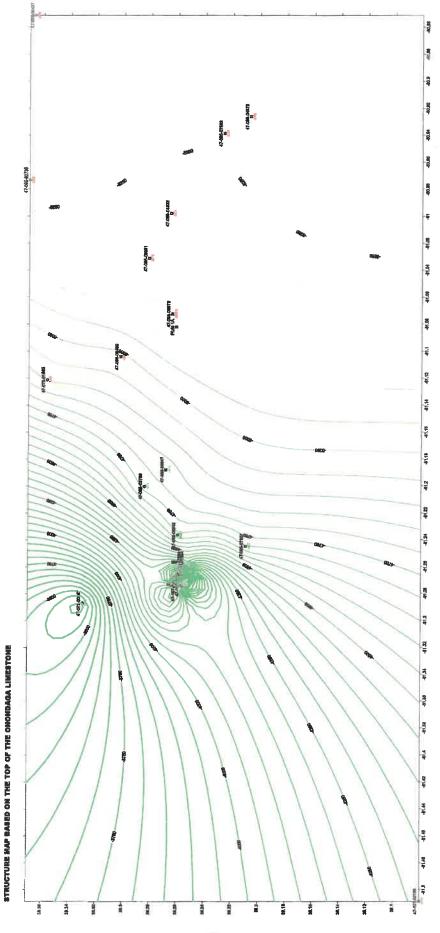
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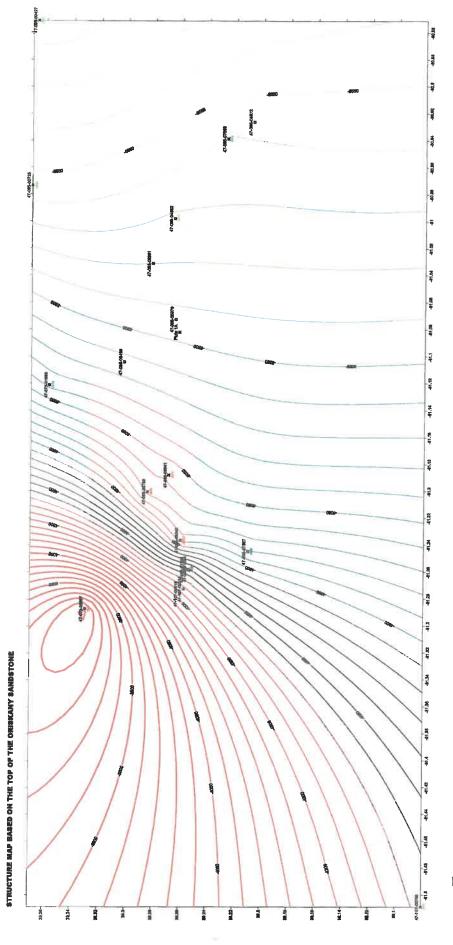




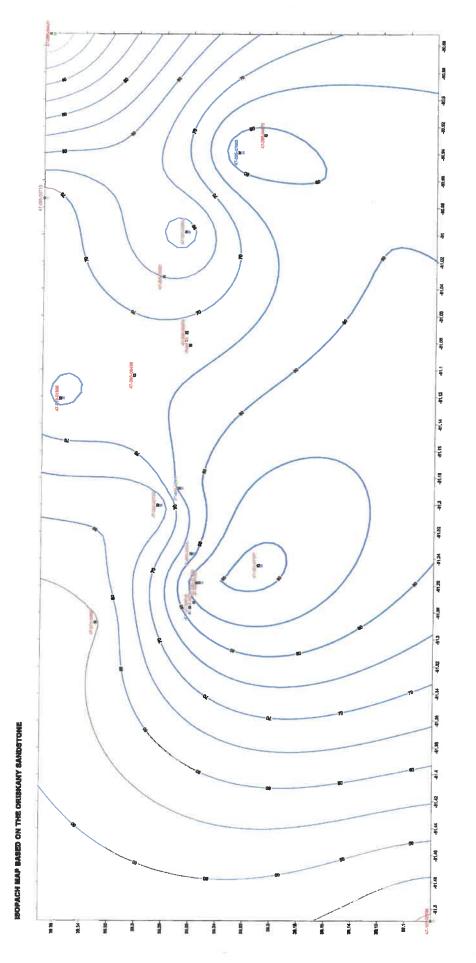
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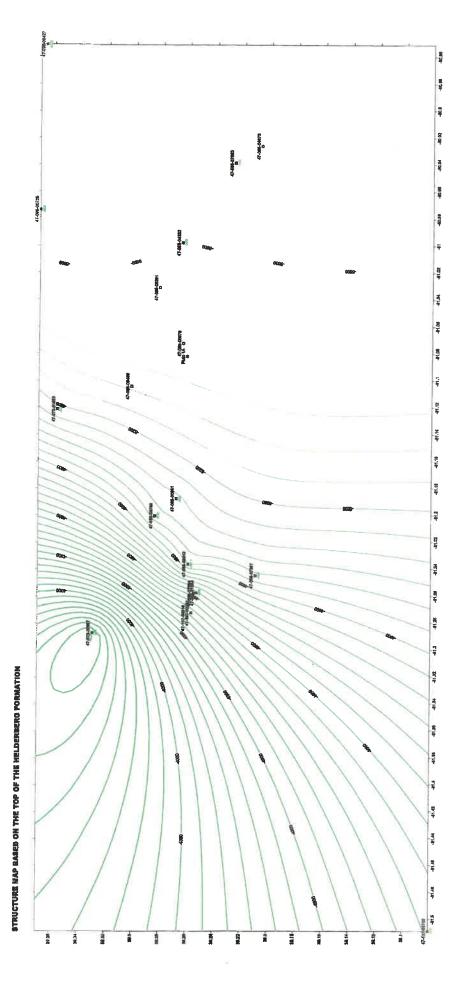
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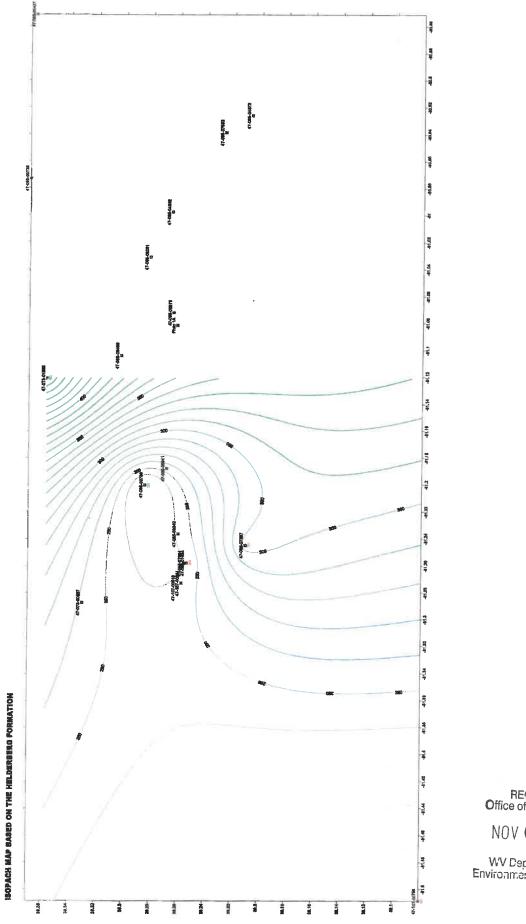
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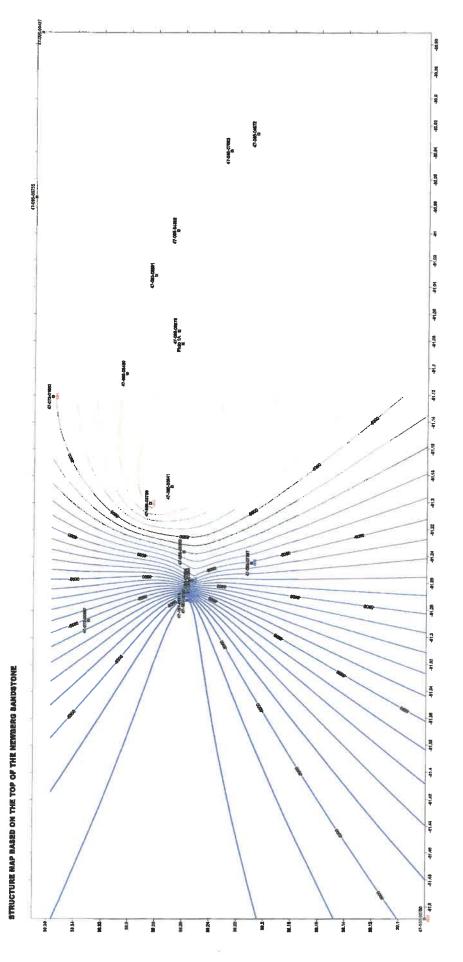


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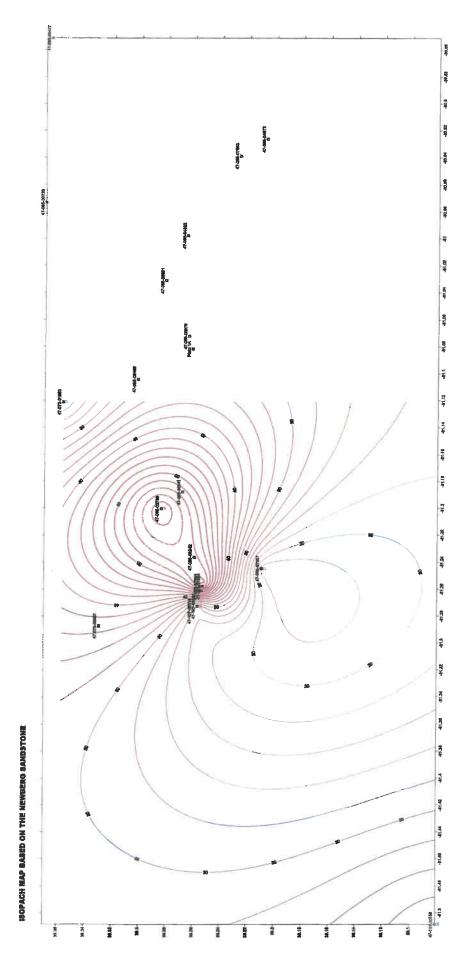




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Place Holder

Section 9 - Operating Requirements/Data

PLAN FOR WELL FAILURES

The following summarizes the plan to address failure of any well to protect the surface environment and prevent migration of injected fluids into any USDW:

Disposal Well Contingency Plan

1. Monitoring and periodic routine investigative procedures will be performed on the injection wells as required by applicable laws, permits and regulations. Pertinent data will be reviewed regularly by qualified operators and forwarded to the agencies as required. Monitoring and testing will be designed to assure-well integrity and safe operation.

2. If a well fails required continuous monitoring or periodic testing standards, the well will be shut-in and the agency notified according to applicable regulations and permit conditions. After investigation into the cause for the failure, work plans will be prepared and reviewed with the regulators for repairing the problem.

3. If a workover is performed on a well, mechanical integrity testing will be conducted as required by applicable regulations before the well is returned to service. Copies of all work reports and logs will be forwarded to the regulatory agencies per applicable requirements.

4. During the period of time required for a well workover or for shut-ins due to MIT failure, the contingency plans of the facility will include the following:

a. If shut-in period is sufficiently brief, the fluids accumulated during this period of time will be routed to another well or held in storage at the facility.

aa. Facilities we will dispose at API 47-085-09721 in Ellenboro, Ritchie County, WV.

MONITORING PROGRAM

The monitoring program proposed for injection operations at this site focuses on the active injection wells themselves. A variety of data will be collected to monitor the injection well operations. This monitoring will take place through utilizing both periodic and continuous techniques.

Mechanical Integrity Testing

Testing of the annulus will be completed as determined by concern of well failure. Casing inspection logs may be conducted to investigate corrosion if it is determined to be necessary due to operational or regulatory concerns when tubing is already removed from the borehole during a workover or stimulation.

STEP RATE TEST

1. Should the 0.8 psi/ft. gradient not allow for sufficient injection pressure for injection operations, a higher pressure may be approved based upon a step-rate test. The Office would then approve up to 90% of the determined formation parting pressure or the maximum pressure reached during the step-rate test in which formation parting does not occur.

2. In order that step-rate test data is valid and supplies the required information needed for the Office to approve a higher injection pressure, the following procedures and equipment should be utilized for testing.

a. The test should be shut-in at least seventy-two (72) hours prior to testing to allow bottom-hole pressure to approach the formation pressure.

b. Test consists of a series of constant-rate injections which increase in a stepwise fashion. Rates should center around the proposed injection rate.

c. Injection periods should last sixty minutes for formations having a permeability of less than ten millidarcies and thirty minutes for formations having a permeability of greater than ten millidarcies.

- d. Test should consist of at least six injection periods.
- e. Injection rates should be controlled with a constant flow-rate regulator.

f. Flow rates should be measured with a turbine flowmeter and rate meter. A stopwatch should be used to check flow rates.

Calibrated pressure gages should be used for observing pressure at each rate at the Ø. surface on the flowing string and all annulus. Measurement of bottom-hole pressures is preferable but not necessary.

Test procedures along with injection rates and pressures are to be recorded and h. submitted to the Office along with a plot of the data.

3. Should there be a need to vary from this test procedure substantially; the Office should be contacted first for agreement of the test procedure.

Please notify the Office forty-eight (48) hours prior to testing to allow the Office the opportunity 4. to witness the test.

Continuous and Operational Monitoring

The proposed wells will have one long string protective casing extending into the injection interval with cement isolating all permeable intervals. The annulus pressure is to be continually monitored to detect any leaks in the tubing or casing. If leaks develop during injection, pressurized annulus fluid would be injected into the permitted injection interval, and injected fluids would not be able-to contact the production string casing above the permitted injection zone. Injectate should therefore have no potential for leakage into un-permitted formations.

Monitoring of physical parameters associated with injection operations will be conducted pursuant to state regulations. At a minimum the monitoring will include, injection pressure, annulus pressure, injection rate, injection volume, annulus level, and injectate characteristics. Details regarding this monitoring follow. Automatic shutdown capability will be operated to ensure that maximum pressure or minimum annulus differential requirements are not exceeded.

Annulus and Injection Pressure

Both the injection pressure and the annulus pressure are to be recorded continuously for each well. Electronic pressure transducers will be placed in pressure taps on the annulus system and injection flow lines. A signal will be sent from these transducers to a digital recorder and/or a chart recorder. The automated control system data will be visually inspected a minimum of once daily for anomalies when the well is operating. As part of the process and controls, the monitoring system will record maximum, minimum and average information. Differential pressures are to be obtained by comparison of simultaneous readings of the annulus and injection pressure transducer readings obtained for the wells.

Injection Rate and Volume

The flow rate to each well will be determined by a liquid flow meter designed for continuous monitoring. Flow rate is to be measured in the flow line to each well. The instrument will send signals to the process control system that calculates cumulative volume.

Annulus Tank Levels

The annulus tank in each well system will have sufficient reservoir capacity to accommodate the anticipated volume fluctuations due to operating temperature and pressure limitations. The annulus tank is to be equipped with an armored reflex sight glass, pressure relief valve and independent liquid fill nozzle. If any annulus fluid is added, it will be recorded by the well operators on an operator log sheet. Annulus tank level is to be recorded a minimum of weekly when injection occurs JANO 4-2817

Waste Characterization and Analysis

JAN 0.4 2017 Injectate characteristics will be monitored by collecting samples per the approved waste analysis plan entered as part of the administrative record for this permit. The waste analysis to be conducted is entered as part of the administrative record for this permit. The transmission of the administrative record for this permit. The transmission of the administrative data regarding average injectate chemical constituents. Tion



February 20, 2024

Mr. Joshua Cook North Central Engineering, LLC 56 Angler Drive PO Box 628 Bridgeport, WV 26330

RE: Project: JB/PLUTO INJECTION WELL Pace Project No.: 30656888

Dear Mr. Cook:

Enclosed are the analytical results for sample(s) received by the laboratory on January 29, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services Beaver
- Pace Analytical Services Greensburg

The samples were subcontracted to Pace Williamsport, 2829 Reach Rd, Williamsport, PA 17701 for specific gravity analysis. The results of this analysis are reported on the Pace Williamsport data tables attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mikayla Gaareer

Nikayla M. Yasurek nikayla.yasurek@pacelabs.com (724)850-5600 Project Manager

Enclosures

cc: Mr. Dennis Fisher, North Central Engineering, LLC





Pace Analytical Services, LLC 1638 Roseytown Road - Suites 2,3,4 Greensburg, PA 15601 (724)850-5600

INJECTATE SAMPLE

CERTIFICATIONS

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601 ANAB DOD-ELAP Rad Accreditation #: L2417 ANABISO/IEC 17025:2017 Rad Cert#: L24170 Alabama Certification #: 41590 Arizona Certification #: AZ0734 Arkansas Certification California Certification #: 2950 Colorado Certification #: PA01547 Connecticut Certification #: PH-0694 EPA Region 4 DW Rad Florida/TNI Certification #: E87683 Georgia Certification #: C040 **Guam Certification** Hawaii Certification Idaho Certification **Illinois Certification** Indiana Certification Iowa Certification #: 391 Kansas Certification #: E-10358 Kentucky Certification #: KY90133 KY WW Permit #: KY0098221 KY WW Permit #: KY0000221 Louisiana DHH/TNI Certification #: LA010 Louisiana DEQ/TNI Certification #: 04086 Maine Certification #: 2023021 Maryland Certification #: 308 Massachusetts Certification #: M-PA1457 Michigan/PADEP Certification #: 9991

Pace Analytical Services Beaver

225 Industrial Park Road, Beaver, WV 25813 Virginia VELAP 460148 West Virginia DEP 060 West Virginia DHHR 00412CM Missouri Certification #: 235 Montana Certification #: Cert0082 Nebraska Certification #: NE-OS-29-14 Nevada Certification #: PA014572023-03 New Hampshire/TNI Certification #: 297622 New Jersey/TNI Certification #: PA051 New Mexico Certification #: PA01457 New York/TNI Certification #: 10888 North Carolina Certification #: 42706 North Dakota Certification #: R-190 Ohio EPA Rad Approval: #41249 Oregon/TNI Certification #: PA200002-015 Pennsylvania/TNI Certification #: 65-00282 Puerto Rico Certification #: PA01457 Rhode Island Certification #: 65-00282 South Dakota Certification Tennessee Certification #: TN02867 Texas/TNI Certification #: T104704188-22-18 Utah/TNI Certification #: PA014572223-14 USDA Soil Permit #: 525-23-67-77263 Vermont Dept. of Health: ID# VT-0282 Virgin Island/PADEP Certification Virginia/VELAP Certification #: 460198 Washington Certification #: C868 West Virginia DEP Certification #: 143 West Virginia DHHR Certification #: 9964C Wisconsin Approve List for Rad

North Carolina DEQ 466 Kentucky Wastewater Certification KY90039 Pennsylvania DEP 68-00839



SAMPLE SUMMARY

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30656888001	SE	Water	01/26/24 09:45	01/29/24 17:25
30656888002	NE	Water	01/26/24 10:09	01/29/24 17:25
30656888003	NW	Water	01/26/24 10:31	01/29/24 17:25
30656888004	SW	Water	01/26/24 10:55	01/29/24 17:25
30656888005	INJECTATE	Water	01/26/24 11:10	01/29/24 17:25



SAMPLE ANALYTE COUNT

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30656888001	SE	EPA 200.7	AGB	8	PASI-BV
		SM 2540C-2015	TMB	1	PASI-BV
		EPA 300.0, Rev 2.1	SMG	3	PASI-BV
		SM 4500-H+ B-11	KLD	1	PASI-BV
30656888002	NE	EPA 200.7	AGB	8	PASI-BV
		SM 2540C-2015	TMB	1	PASI-BV
		EPA 300.0, Rev 2.1	SMG	3	PASI-BV
		SM 4500-H+ B-11	KLD	1	PASI-BV
30656888003	NW	EPA 200.7	AGB	8	PASI-BV
		SM 2540C-2015	ТМВ	1	PASI-BV
		EPA 300.0, Rev 2.1	SMG	3	PASI-BV
		SM 4500-H+ B-11	KLD	1	PASI-BV
30656888004	SW	EPA 200.7	AGB	8	PASI-BV
		SM 2540C-2015	TMB	1	PASI-BV
		EPA 300.0, Rev 2.1	SMG	3	PASI-BV
		SM 4500-H+ B-11	KLD	1	PASI-BV
30656888005	INJECTATE	EPA 200.7	AGB	8	PASI-BV
		SM 2540C-2015	ТМВ	1	PASI-BV
		EPA 300.0, Rev 2.1	SMG	3	PASI-BV
		SM 4500-H+ B-11	KLD	1	PASI-BV
		EPA 900.0	REH1	2	PASI-PA
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-BV = Pace Analytical Services - Beaver PASI-PA = Pace Analytical Services - Greensburg



ANALYTICAL RESULTS

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

Sample: SE	Lab ID:	30656888001	Collected	l: 01/26/24	4 09:45	Received: 01/	/29/24 17:25 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qua
BVR 200.7 Metals Total	Analytical I	Method: EPA 2	00.7 Prepa	ration Meth	nod: EP	A 200.2			
	Pace Analy	tical Services	- Beaver						
Aluminum	236	ug/L	20.0	18.3	1	01/31/24 02:04	02/01/24 11:55	7429-90-5	
Arsenic	ND	ug/L	20.0	6.4	1	01/31/24 02:04			
Barium	53.1	ug/L	5.0	2.0	1	01/31/24 02:04			
Calcium	33500	ug/L	500	86.0	1		02/01/24 11:55		
Iron	248	ug/L	50.0	47.7	1	01/31/24 02:04			
Manganese	55.6	ug/L	5.0	2.7	1	01/31/24 02:04			
Sodium	11800	ug/L	500	399	1	01/31/24 02:04			
Strontium	160	ug/L	10.0	1.3	1		02/01/24 11:55		N2
BVR 2540C Total Dissol. Solids	Analytical I	Method: SM 28	540C-2015						
	-	tical Services							
Total Dissolved Solids	170	mg/L	10.0	5.0	1		01/30/24 09:36		
		U							
BVR 300.0 IC Anions	-	Vethod: EPA 3 /tical Services		. I					
Bromide	ND	mg/L	0.10	0.034	1		02/08/24 22:28	24959-67-9	
Chloride	22.8	mg/L	1.0	0.25	1		02/08/24 22:28	16887-00-6	
Sulfate	12.6	mg/L	5.0	1.2	1		02/08/24 22:28	14808-79-8	
BVR 4500H+ pH, Electrometric	Analytical I	Method: SM 4	500-H+ B-11						
	Pace Analy	tical Services	- Beaver						
pH at 25 Degrees C	7.7	Std. Units			1		01/30/24 11:07		H6,N2
Sample: NE	Lah ID:	30656888002	Collected	1: 01/26/24	1 10.00	Received: 01/	120/24 17:25 M	atrix: Water	
	Lab ID.	3003000002	_	1. 01/20/2	+ 10.03	Received. 01/	23/24 17.23 108		
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qua
BVR 200.7 Metals Total		Method: EPA 2	00 7 Prena	ration Meth	od. ED	A 200 2			
	•	tical Services	•		100. L17	1200.2			
Aluminum	241	ug/L	20.0	18.3	1	01/31/24 02:04	02/01/24 11:57	7429-90-5	
Arsenic	ND	ug/L	20.0	6.4	1		02/01/24 11:57	7440-38-2	
Barium	74.9	ug/L	5.0	2.0	1	01/31/24 02:04	02/01/24 11:57	7440-39-3	
Calcium	40800	ug/L	500	86.0	1		02/01/24 11:57		
Iron	269	ug/L	50.0	47.7	1	01/31/24 02:04	02/01/24 11:57	7439-89-6	
Manganese	82.6	ug/L	5.0	2.7	1	01/31/24 02:04	02/01/24 11:57	7439-96-5	
Sodium	4500	ug/L	500	399	1	01/31/24 02:04	02/01/24 11:57	7440-23-5	
Strontium	209	ug/L	10.0	1.3	1	01/31/24 02:04	02/01/24 11:57	7440-24-6	N2
BVR 2540C Total Dissol. Solids	Analytical N	Method: SM 2	540C-2015						
	-	tical Services							
Total Dissolved Solids	167	mg/L	10.0	5.0	1		01/30/24 09:44		



ANALYTICAL RESULTS

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

BVR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1 Pace Analytical Services - Beaver Bromide ND mg/L 0.10 0.034 1 02/08/24 23:31 24959-67-9 Chioride 3.0 mg/L 1.0 0.25 1 02/08/24 23:31 16887-00-6 Sulfate 13.2 mg/L 1.0 0.25 1 02/08/24 23:31 16887-00-6 Sulfate 13.2 mg/L 1.0 0.25 1 02/08/24 23:31 16887-00-6 Sulfate 1.0 0.12 1 02/08/24 23:31 16887-00-6 BVR 4500H+ pH, Electrometric Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver 1 01/30/24 11:09 H6,N Sample: NW Lab ID: 306566888003 Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Parameters Results Units Limit MDL DF Prepared Analyzed CAS No. Ou BVR 200.7 Metals Total Analytical Method: EPA 200.7 Resarres D1/31/24 02:04 02/01/24 11:59 <t< th=""><th>Sample: NE</th><th>Lab ID:</th><th>30656888002</th><th>Collected</th><th>d: 01/26/24</th><th>4 10:09</th><th>Received: 01/</th><th>29/24 17:25 M</th><th>latrix: Water</th><th></th></t<>	Sample: NE	Lab ID:	30656888002	Collected	d: 01/26/24	4 10:09	Received: 01/	29/24 17:25 M	latrix: Water	
Pace Analytical Services - Beaver Bromide Chloride ND 9.0 mg/L 9.0 0.10 0.0 0.034 0.0 1 02/08/24 23:31 2495-67-9 23:31 16837-00-6 83:01 Sulfate 13.2 mg/L 5.0 1.2 1 02/08/24 23:31 16837-00-6 Sulfate 13.2 mg/L 5.0 1.2 1 02/08/24 23:31 16837-00-6 Sulfate Analytical Method: SM 4500-H+ B:11 Pace Analytical Services - Beaver 1 01/30/24 11:09 H6,N Sample: NW Lab ID: 30656888003 Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Parameters Results Units Limit MDL DF Prepared Analyzed CAS No. Qu BVR 200.7 Metals Total Analytical Method: EPA 200.7 Preparation Method: EPA 200.2 Pace Analytical Services - Beaver Analytical Method: SPA 200.2 Pace Analytical Method: SPA 200.4 02/01/24 11:59 7429-90-5 Arsenic ND ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7439-	Parameters	Results	Units	•	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Chloride 9.0 mg/L 1.0 0.25 1 02/08/24 23:31 16887-00-6 Sultate 13.2 mg/L 5.0 1.2 1 02/08/24 23:31 16887-00-6 Sultate Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver 1 01/30/24 11:09 H6,N Sample: NW Lab ID: 30656888003 Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Report Lab ID: 30656888003 Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Sample: NW Lab ID: 30656888003 Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Results Units Limit MDL DF Prepared Analyteed CAS No. Qu BVR 200.7 Metals Total Analytical Method: EPA 200.7 Prepared Analyteed CAS No. Qu BVR 200.7 Metals Total Analytical Method: EPA 200.7 Prepared 1 01/31/24 02:04 02/01/24 11:59	BVR 300.0 IC Anions				.1					
Pace Analytical Services - Beaver 1 01/30/24 11:09 H6,N Sample: NW Lab ID: 306566888003 Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Parameters Results Units Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Parameters Results Units Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Parameters Analytical Method: EPA 200.7 Prepared Analyzed CAS No. Qu Analytical Method: EPA 200.7 Prepared Analyzed CAS No. Qu Analytical Method: EPA 200.7 Prepared Analyzed CAS No. Qu Analytical Method: EPA 200.7 Prepared Analyzed CAS No. Qu Analytical Method: EPA 200.7	Chloride	9.0	mg/L	1.0	0.25	1		02/08/24 23:31	16887-00-6	
Sample: NW Lab ID: 306556888003 Collected: 01/26/24 10:31 Received: 01/29/24 17:25 Matrix: Water Parameters Results Units Limit MDL DF Prepared Analyzed CAS No. Qu BVR 200.7 Metals Total Analytical Method: EPA 200.7 Preparation Method: EPA 200.2 Pace Analytical Services - Beaver 1 01/31/24 02:01/24 11:59 7429-90-5 Aluminum 193 ug/L 20.0 6.4 1 01/31/24 02:01/24 11:59 7440-38-2 Barium 20.9 ug/L 5.0 2.0 1 01/31/24 02:01 20:1724 11:59 7440-38-2 Barium 20.9 ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7440-38-3 Calcium 212 ug/L 5.0 4.7 1 01/31/24 02:04 02/01/24 11:59 7440-34-3 Calcium 1/20 ug/L 5.0 <	BVR 4500H+ pH, Electrometric									
Parameters Results Units Report Limit MDL DF Prepared Analyzed CAS No. Quee BVR 200.7 Metals Total Analytical Kethod: EPA 200.7 Preparation Method: EPA 200.2 Pace Analytical Services - Beaver Pace Analytical Services - Beaver 01/31/24 02:04 02/01/24 11:59 7429-90-5 7429-90-5 740-93-2 740-93-2 20.9 ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7440-38-2 7440-38-2 20.9 ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7440-38-2 7440-70-2	pH at 25 Degrees C	7.8	Std. Units			1		01/30/24 11:09		H6,N2
Parameters Results Units Limit MDL DF Prepared Analyzed CAS No. Qu BVR 200.7 Metals Total Analytical Method: EPA 200.7 Preparation Method: EPA 200.2 Pace Analytical Services - Beaver Pace Analytical Services - Beaver Aluminum 193 ug/L 20.0 18.3 1 01/31/24 02:04 02/01/24 11:59 7429-90-5 Arsenic ND ug/L 20.0 6.4 1 01/31/24 02:04 02/01/24 11:59 7440-38-2 Barium 20.9 ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7440-38-2 Calcium 5120 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7440-39-3 Calcium 141 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7440-39-3 Sodium 1760 ug/L 5.0 2.7 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 Strontium 32.9 ug/L 10.0 1.3	Sample: NW	Lab ID:	30656888003	Collected	d: 01/26/24	4 10:31	Received: 01/	/29/24 17:25 M	latrix: Water	
Pace Analytical Services - Beaver Aluminum 193 ug/L 20.0 18.3 1 01/31/24 02:04 02/01/24 11:59 7429-90-5 Arsenic ND ug/L 20.0 6.4 1 01/31/24 02:04 02/01/24 11:59 7440-38-2 Barium 20.9 ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7440-39-3 Calcium 5120 ug/L 500 86.0 1 01/31/24 02:04 02/01/24 11:59 7440-39-3 Calcium 5120 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7439-89-6 Manganese 14.7 ug/L 5.0 2.7 1 01/31/24 02:04 02/01/24 11:59 7439-89-6 Sodium 1760 ug/L 500 399 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 N2 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 Pace Analytical Services - Beaver 1 01/31/24 02:04 02/01/24 11:59 7440-24-6 N2 BVR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1	Parameters	Results	Units	•	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic ND ug/L 20.0 6.4 1 01/31/24 02:04 02/01/24 11:59 7440-38-2 Barium 20.9 ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7440-39-3 Calcium 5120 ug/L 500 86.0 1 01/31/24 02:04 02/01/24 11:59 7440-70-2 Iron 141 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7440-70-2 Iron 141 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7440-70-2 Manganese 14.7 ug/L 5.0 2.7 1 01/31/24 02:04 02/01/24 11:59 7440-74-2 N2 Strontium 32.9 ug/L 10.0 1.3 1 01/31/24 02:04 02/01/24 11:59 7440-24-6 N2 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 Pace Analytical Services - Beaver 1 01/31/24 02:04 02/01/24 11:59 7440-24-6 N2 BVR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1 Pace Analytical Services - Beaver 0.10 </td <td>BVR 200.7 Metals Total</td> <td></td> <td></td> <td>•</td> <td>ration Meth</td> <td>nod: EP</td> <td>A 200.2</td> <td></td> <td></td> <td></td>	BVR 200.7 Metals Total			•	ration Meth	nod: EP	A 200.2			
Barium 20.9 ug/L 5.0 2.0 1 01/31/24 02:04 02/01/24 11:59 7440-39-3 Calcium 5120 ug/L 500 86.0 1 01/31/24 02:04 02/01/24 11:59 7440-70-2 Iron 141 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7439-89-6 Manganese 14.7 ug/L 5.0 2.7 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 Sodium 1760 ug/L 5.00 3.9 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 Strontium 32.9 ug/L 10.0 1.3 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 7440-23-6 N2 BvR 300.0 IC Anions Malytical Method: EPA 300.0, Rev 2.1 7440-24-6 N2 Pace Analytical Services - Beaver 10.0 5.0 1 01/30/24 09:44 2 BvR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1 740-24-6 N2 24959-67-9 20/08/24 23:52 24959-67-9			0							
Calcium 5120 ug/L 500 86.0 1 01/31/24 02:04 02/01/24 11:59 7440-70-2 Iron 141 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7439-89-6 Manganese 14.7 ug/L 5.0 2.7 1 01/31/24 02:04 02/01/24 11:59 7439-89-6 Sodium 1760 ug/L 500 399 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 Strontium 32.9 ug/L 10.0 1.3 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 02/01/24 11:59 7440-24-6 N2 BVR 300.0 IC Anions Analytical Method: SM 2540C-2015 Pace Analytical Services - Beaver 01/30/24 09:44 - - BVR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1 Pace Analytical Services - Beaver 0.00 1 02/08/24 23:52 24959-67-9 Chloride ND mg/L 0.10 0.034 1 02/08/24 23:52 24959-67-9 Sulfate ND mg/L										
Iron 141 ug/L 50.0 47.7 1 01/31/24 02:04 02/01/24 11:59 7439-89-6 Manganese 14.7 ug/L 5.0 2.7 1 01/31/24 02:04 02/01/24 11:59 7439-96-5 Sodium 1760 ug/L 500 399 1 01/31/24 02:04 02/01/24 11:59 7439-96-5 Strontium 32.9 ug/L 10.0 1.3 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 N2 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 Face Analytical Services - Beaver 50.0 mg/L 10.0 5.0 1 01/30/24 09:44 N2 BVR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1 Face Analytical Services - Beaver 01/30/24 09:44 1 02/08/24 23:52 24959-67-9 Bromide ND mg/L 0.10 0.034 1 02/08/24 23:52 16887-00-6 Sulfate ND mg/L 1.0 0.25 1 02/08/24 23:52 16887-00-6 Sulfate Analytical Method: SM 4500-H+ B-11 Face Analytical Services - Beaver 1 02/08/24 23:52 <td></td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			0							
Manganese 14.7 ug/L 5.0 2.7 1 01/31/24 02:04 02/01/24 11:59 7439-96-5 Sodium 1760 ug/L 500 399 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 Strontium 32.9 ug/L 10.0 1.3 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 N2 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 Pace Analytical Services - Beaver 1 01/31/24 02:04 02/01/24 11:59 7440-24-6 N2 BVR 300.0 IC Anions Analytical Method: SM 2540C-2015 Pace Analytical Services - Beaver 1 01/30/24 09:44			0							
Sodum 1760 ug/L 500 399 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 N2 Strontium 32.9 ug/L 10.0 1.3 1 01/31/24 02:04 02/01/24 11:59 7440-23-5 N2 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 Pace Analytical Services - Beaver 50.0 mg/L 10.0 5.0 1 01/30/24 09:44 4 BVR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1 Pace Analytical Services - Beaver 1 0.0034 1 02/08/24 23:52 24959-67-9 Bromide ND mg/L 0.10 0.025 1 02/08/24 23:52 24959-67-9 24959-67-9 Sulfate ND mg/L 1.0 0.25 1 02/08/24 23:52 16887-00-6 6.8 mg/L 5.0 1.2 1 02/08/24 23:52 14808-79-8 BVR 4500H+ pH, Electrometric Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver 1 02/08/24 23:52 14808-79-8			0							
Strontium 32.9 ug/L 10.0 1.3 1 01/31/24 02:04 02/01/24 11:59 7440-24-6 N2 BVR 2540C Total Dissol. Solids Analytical Method: SM 2540C-2015 Pace Analytical Services - Beaver - - - - - - N2 BVR 300.0 IC Anions 50.0 mg/L 10.0 5.0 1 01/30/24 09:44 - - - - - - - - - - - - - - N2 - - - N2 - - - - - - - N2 - N2 - N2 - - - - - - - - - - - - - - -	0		0							
BVR 2540C Total Dissol. SolidsAnalytical Method: SM 2540C-2015 Pace Analytical Services - BeaverTotal Dissolved Solids50.0mg/L10.05.0101/30/24 09:44BVR 300.0 IC AnionsAnalytical Method: EPA 300.0, Rev 2.1 Pace Analytical Services - BeaverNDmg/L0.100.034102/08/24 23:5224959-67-9Bromide Chloride SulfateNDmg/L1.00.25102/08/24 23:5216887-00-6BVR 4500H+ pH, ElectrometricAnalytical Method: SM 4500-H+ B-11 Pace Analytical Services - BeaverSM 4500-H+ B-11 Pace Analytical Services - BeaverND										N2
BVR 300.0 IC Anions Analytical Method: EPA 300.0, Rev 2.1 Pace Analytical Services - Beaver Bromide ND mg/L 0.10 0.034 1 02/08/24 23:52 24959-67-9 Chloride ND mg/L 1.0 0.25 1 02/08/24 23:52 16887-00-6 Sulfate 6.8 mg/L 5.0 1.2 1 02/08/24 23:52 14808-79-8 BVR 4500H+ pH, Electrometric Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver Pace Analytical Services - Beaver V	BVR 2540C Total Dissol. Solids		Method: SM 2							
ND mg/L 0.10 0.034 1 02/08/24 23:52 24959-67-9 Chloride ND mg/L 1.0 0.25 1 02/08/24 23:52 16887-00-6 Sulfate 6.8 mg/L 5.0 1.2 1 02/08/24 23:52 14808-79-8 BVR 4500H+ pH, Electrometric Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver Pace Analytical Services - Beaver Face Analytical Services - Beaver	Total Dissolved Solids	50.0	mg/L	10.0	5.0	1		01/30/24 09:44	ļ	
Chloride ND mg/L 1.0 0.25 1 02/08/24 23:52 16887-00-6 Sulfate 6.8 mg/L 5.0 1.2 1 02/08/24 23:52 14808-79-8 BVR 4500H+ pH, Electrometric Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver Pace Analytical Services - Beaver Figure 4.2	BVR 300.0 IC Anions	•			.1					
Chloride ND mg/L 1.0 0.25 1 02/08/24 23:52 16887-00-6 Sulfate 6.8 mg/L 5.0 1.2 1 02/08/24 23:52 14808-79-8 BVR 4500H+ pH, Electrometric Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver Pace Analytical Services - Beaver 5.0 1.2 1 <t< td=""><td>Bromide</td><td>ND</td><td>mg/L</td><td>0.10</td><td>0.034</td><td>1</td><td></td><td>02/08/24 23:52</td><td>24959-67-9</td><td></td></t<>	Bromide	ND	mg/L	0.10	0.034	1		02/08/24 23:52	24959-67-9	
Sulfate 6.8 mg/L 5.0 1.2 1 02/08/24 23:52 14808-79-8 BVR 4500H+ pH, Electrometric Analytical Method: SM 4500-H+ B-11 Pace Analytical Services - Beaver Pace Analytical Services - Beaver Figure Analytical Services - Beaver	Chloride		•	1.0		1		02/08/24 23:52	16887-00-6	
Pace Analytical Services - Beaver			•							
pH at 25 Degrees C 7.2 Std. Units 1 01/30/24 11:11 H6,N	BVR 4500H+ pH, Electrometric	-								
	pH at 25 Degrees C	7.2	Std. Units			1		01/30/24 11:11		H6,N2



ANALYTICAL RESULTS

Project: JB/PLUTO INJECTION WELL

Pace Project No .:

.: 30656888

Sample: SW	Lab ID:	30656888004	Collected:	01/26/24	10:55	Received: 01/	29/24 17:25 Ma	atrix: Water	
Deservatore	Desults	l leite	Report			Drenered	A so a lu seo al		Qual
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 200.7 Metals Total	Analytica	I Method: EPA 2	00.7 Prepar	ation Meth	od: EP/	A 200.2			
	Pace Ana	lytical Services	- Beaver						
Aluminum	184	ug/L	20.0	18.3	1	01/31/24 02:04	02/01/24 12:01	7429-90-5	
Arsenic	ND	ug/L	20.0	6.4	1	01/31/24 02:04	02/01/24 12:01	7440-38-2	
Barium	24.4	ug/L	5.0	2.0	1	01/31/24 02:04	02/01/24 12:01	7440-39-3	
Calcium	8100	ug/L	500	86.0	1	01/31/24 02:04	02/01/24 12:01	7440-70-2	
Iron	128	ug/L	50.0	47.7	1	01/31/24 02:04	02/01/24 12:01	7439-89-6	
Manganese	13.2	ug/L	5.0	2.7	1	01/31/24 02:04	02/01/24 12:01	7439-96-5	
Sodium	2170	ug/L	500	399	1	01/31/24 02:04	02/01/24 12:01	7440-23-5	
Strontium	48.5	ug/L	10.0	1.3	1	01/31/24 02:04	02/01/24 12:01	7440-24-6	N2
BVR 2540C Total Dissol. Solids	Analytica	Method: SM 25	540C-2015						
	Pace Ana	lytical Services	- Beaver						
Total Dissolved Solids	43.0	mg/L	10.0	5.0	1		01/30/24 09:46		
BVR 300.0 IC Anions	Analytica	Method: EPA 3	00.0, Rev 2. ⁻	1					
	Pace Ana	lytical Services	- Beaver						
Bromide	ND	mg/L	0.10	0.034	1		02/09/24 00:13	24959-67-9	
Chloride	2.0	mg/L	1.0	0.25	1		02/09/24 00:13	16887-00-6	
Sulfate	8.3	mg/L	5.0	1.2	1		02/09/24 00:13	14808-79-8	
BVR 4500H+ pH, Electrometric	Analytica	Method: SM 45	500-H+ B-11						
	Pace Ana	lytical Services	- Beaver						
pH at 25 Degrees C	7.2	Std. Units			1		01/30/24 11:14		H6,N2
Sample: INJECTATE	Lab ID:	30656888005	Collected:	: 01/26/24	11:10	Received: 01/	29/24 17:25 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 200.7 Metals Total	Analvtica	I Method: EPA 2	00.7 Prepar	ation Meth	od: EP/	A 200.2			
	-	lytical Services							
Aluminum	ND	ug/L	10000	9160	500	01/31/24 02:04	02/01/24 12:21	7429-90-5	M1
Arsenic	ND	ug/L	10000	3210	500	01/31/24 02:04	02/01/24 12:21	7440-38-2	M1
Barium	1360000	ug/L	2500	989	500	01/31/24 02:04	02/01/24 12:21	7440-39-3	M1
Calcium	15700000	ug/L	250000	43000	500	01/31/24 02:04	02/01/24 12:21	7440-70-2	M1
Iron	104000	ug/L	25000	23900	500	01/31/24 02:04	02/01/24 12:21	7439-89-6	M1
Manganese	5380	ug/L	2500	1340	500	01/31/24 02:04	02/01/24 12:21	7439-96-5	M1,R1
Sodium	49100000	ug/L	250000	199000	500	01/31/24 02:04	02/01/24 12:21	7440-23-5	M1
Strontium	4800000	ug/L	50000	6430	5000	01/31/24 02:04	02/01/24 13:07	7440-24-6	M1,N2
BVR 2540C Total Dissol. Solids	Analytica	Method: SM 25	540C-2015						
	•	lytical Services							
Total Dissolved Solids	232000	mg/L	1000	500	1		01/30/24 09:46		1c,E
		····g· =							· -, _

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

Sample: INJECTATE	Lab ID:	30656888005	Collecte	d: 01/26/2	4 11:10	Received: 01	/29/24 17:25 Ma	atrix: Water	
Deservatore	Desults	l la ita	Report			Dranarad	Analyzad		Qual
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
BVR 300.0 IC Anions	Analytical	Method: EPA 3	00.0, Rev 2	2.1					
	Pace Anal	ytical Services	- Beaver						
Bromide	1260	mg/L	100	33.8	1000		02/09/24 00:34	24959-67-9	
Chloride	121000	mg/L	1000	246	1000		02/09/24 00:34	16887-00-6	
Sulfate	ND	mg/L	5000	1210	1000		02/09/24 00:34	14808-79-8	D3
BVR 4500H+ pH, Electrometric	Analytical	Method: SM 45	500-H+ B-1	1					
	Pace Anal	ytical Services	- Beaver						
pH at 25 Degrees C	6.1	Std. Units			1		01/30/24 11:16		H6,N2



QUALITY CONTROL DATA

	045405	-		A										
QC Batch:	645465			•	sis Metho		EPA 200.7							
QC Batch Method:	EPA 20	0.2		,	sis Descri		3VR 200.7 N							
					atory:		Pace Analytic		ices - Bea	ver				
Associated Lab Sa	mples: 3	306568880	01, 3065688800	2, 3065688	8003, 306	56888004,	3065688800	5						
METHOD BLANK:	3144987	,			Matrix: W	ater								
Associated Lab Sar	mples: 3	306568880	01, 3065688800	2, 3065688	8003, 306	56888004,	3065688800	5						
				Blan	k	Reporting								
Para	meter		Units	Resu	ılt	Limit	MDL		Analyze	ed	Qu	alifiers		
Aluminum			ug/L		ND	20.	0	18.3	01/31/24 2	20:53				
Arsenic			ug/L		ND	20.			01/31/24 2					
Barium			ug/L		ND	5.	0	2.0	01/31/24 2	20:53				
Calcium			ug/L		ND	50	D	86.0	01/31/24 2	20:53				
ron			ug/L		ND	50.	0	47.7	01/31/24 2	20:53				
Manganese			ug/L		ND	5.	D		01/31/24 2	20:53				
Sodium			ug/L		ND	50			01/31/24 2					
Strontium			ug/L		ND	10.	0	1.3 (01/31/24 2	20:53	N2			
_ABORATORY CO	NTROL SA	AMPLE:	3144988											
_				Spike	LC	C	LCS	0/ 1	Rec					
Para	meter		Units	Conc.	Res		% Rec		nits	Qua	lifiers	_		
	meter		Units ug/L		Res			Lin		Qua	llifiers	_		
Aluminum	meter		ug/L ug/L	Conc. 2000 2000	Res 	ult 2030 2050	% Rec 102 103	Lin	nits 85-115 85-115	Qua	lifiers	_		
Aluminum Arsenic Barium	meter		ug/L ug/L ug/L	Conc. 2000 2000 2000	Res 0 0 0 0	2030 2050 2060	% Rec 102 103 103	Lin	nits 85-115 85-115 85-115	Qua	lifiers	_		
Aluminum Arsenic Barium Calcium	meter		ug/L ug/L ug/L ug/L	Conc. 2000 2000 2000 40000	Res 0 0 0 0 0	2030 2050 2060 39200	% Rec 102 103 103 98	Lin	nits 85-115 85-115 85-115 85-115	Qua	lifiers	_		
Aluminum Arsenic Barium Calcium ron	meter		ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 2000 40000 2000	Res	2030 2050 2060 39200 2020	% Rec 102 103 103 98 101	Lin	nits 85-115 85-115 85-115 85-115 85-115	Qua	lifiers	_		
Aluminum Arsenic Barium Calcium Iron Manganese	meter		ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 2000 40000 2000 2000	Res	Eult 2030 2050 2060 39200 2020 2020 2070	% Rec 102 103 103 98 101 104	Lin	nits 85-115 85-115 85-115 85-115 85-115 85-115	Qua	lifiers	_		
Aluminum Arsenic Barium Calcium Iron Manganese Sodium	meter		ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 40000 2000 2000 2000	Res	2030 2050 2060 39200 2020 2070 20400	% Rec 102 103 103 98 101 104 102	Lin	nits 85-115 85-115 85-115 85-115 85-115 85-115 85-115		lifiers	_		
Aluminum Arsenic Barium Calcium Iron Manganese Sodium	meter		ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 2000 40000 2000 2000	Res	Eult 2030 2050 2060 39200 2020 2020 2070	% Rec 102 103 103 98 101 104	Lin	nits 85-115 85-115 85-115 85-115 85-115 85-115		lifiers	_		
Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium			ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 40000 2000 2000 2000 2000	Res	2030 2050 2060 39200 2020 2070 20400 2100	% Rec 102 103 103 98 101 104 102 105	Lin	nits 85-115 85-115 85-115 85-115 85-115 85-115 85-115		lifiers	_		
Para Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium MATRIX SPIKE & M		PIKE DUPL	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 40000 2000 2000 2000 2000 20	Res	2030 2050 2060 39200 2020 2070 20400	% Rec 102 103 103 98 101 104 102 105	Lin	nits 85-115 85-115 85-115 85-115 85-115 85-115 85-115		lifiers	_		
Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium		PIKE DUPL	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 2000 2000 2000 2000 2000 20	Res	2030 2050 2060 39200 2020 2070 20400 2100 3144990	% Rec 102 103 103 98 101 104 102 105		nits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115	12		_	Мах	
Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium	MATRIX SF	PIKE DUPL Units	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000 2000 40000 2000 2000 2000 2000 20	Res	2030 2050 2060 39200 2020 2070 20400 2100	% Rec 102 103 103 98 101 104 102 105	Lin	nits 85-115 85-115 85-115 85-115 85-115 85-115 85-115	12	o Rec imits	RPD	Max RPD	Qual
Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium MATRIX SPIKE & M	MATRIX SF	Units	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ICATE: 3144 306567778001 Result	Conc. 2000 2000 2000 2000 2000 2000 2000 20	MSD Spike	2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS Result	% Rec 102 103 103 98 101 104 102 105 MSD	MS	mits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 MSD % Rec	√2 %;	5 Rec		RPD	Qual
Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium MATRIX SPIKE & M Paramete	MATRIX SF		ug/L ug/L ug/L ug/L ug/L ug/L ug/L !ICATE: 3144	Conc. 2000	Res D D D D D D D D D D D D D	2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS	% Rec 102 103 103 98 101 104 102 105 MSD Result	Lin MS % Rec	mits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 MSD % Rec 0 1	√2 × L 10 7	o Rec imits		RPD 20	Qual
Aluminum Arsenic Barium Calcium ron Manganese Sodium Strontium MATRIX SPIKE & M Paramete Aluminum Arsenic	MATRIX SF	Units ug/L	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ICATE: 3144 30656778001 <u>Result</u> 0.33 mg/L ND 0.017	Conc. 2000	Res 	Ault 2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS Result 2520	% Rec 102 103 103 98 101 104 102 105 MSD Result 2520	MS % Rec 110	Mits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 MSD MSD 11 4 10	√2 × L 10 7 04 7	6 Rec imits 70-130	0	RPD 20 20	Qual
Aluminum Arsenic Barium Calcium ron Manganese Sodium Strontium MATRIX SPIKE & N Paramete Aluminum Arsenic Barium	MATRIX SF	Units ug/L ug/L ug/L	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ICATE: 3144 30656778001 <u>Result</u> 0.33 mg/L ND 0.017 mg/L	Conc. 2000	Res 0 0 0 0 0 0 0 0 0 0 0 0 0	Ault 2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS Result 2520 2070 2100	% Rec 102 103 103 98 101 104 102 105 MSD Result 2520 2080 2110	MS % Rec 110 104	Mits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 115 85-	√2 × L 10 7 04 7 05 7	6 Rec imits 70-130 70-130 70-130	0 0 0	RPD 20 20 20	Qua
Aluminum Arsenic Barium Calcium ron Manganese Sodium Strontium MATRIX SPIKE & M Paramete Aluminum Arsenic Barium Calcium	MATRIX SF	Units ug/L ug/L ug/L ug/L	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000	Res D D D D D D D D D D D D D	Ault 2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS Result 2520 2070 2070 2100 41200	% Rec 102 103 103 98 101 104 102 105 MSD Result 2520 2080 2110 41300	Lin MS % Rec 110 104 104 99	Mits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 10 11 4 10 9 12 12 12 12 12 12 12 12 12 12	√2 × L 10 7 04 7 05 7 99 7	6 Rec imits 70-130 70-130 70-130 70-130	0 0 0 0	RPD 20 20 20 20	Qua
Aluminum Arsenic Barium Calcium ron Manganese Sodium Strontium MATRIX SPIKE & M Paramete Aluminum Arsenic Barium Calcium ron	MATRIX SF	Units ug/L ug/L ug/L ug/L ug/L	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000	Res D D D D D D D D D D D D D	Ault 2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS Result 2520 2070 2070 2100 41200 2390	% Rec 102 103 103 98 101 104 102 105 MSD Result 2520 2080 2110 41300 2400	MS % Rec 110 104 99 105	Mits 85-115	√2 × L 10 7 04 7 05 7 99 7 03 7	6 Rec imits 70-130 70-130 70-130 70-130 70-130	0 0 0 0 0	RPD 20 20 20 20 20 20	Qua
Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium MATRIX SPIKE & N	MATRIX SF	Units ug/L ug/L ug/L ug/L	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000	Res D D D D D D D D D D D D D	Ault 2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS Result 2520 2070 2070 2100 41200	% Rec 102 103 103 98 101 104 102 105 MSD Result 2520 2080 2110 41300	Lin MS % Rec 110 104 104 99	Mits 85-115	√2 × L 10 7 04 7 05 7 99 7 03 7	6 Rec imits 70-130 70-130 70-130 70-130	0 0 0 0	RPD 20 20 20 20 20 20	Qua
Aluminum Arsenic Barium Calcium Iron Manganese Sodium Strontium MATRIX SPIKE & M Paramete Aluminum Arsenic Barium Calcium ron	MATRIX SF	Units ug/L ug/L ug/L ug/L ug/L	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	Conc. 2000	Res D D D D D D D D D D D D D	Ault 2030 2050 2060 39200 2020 2070 20400 2100 3144990 MS Result 2520 2070 2070 2100 41200 2390	% Rec 102 103 103 98 101 104 102 105 MSD Result 2520 2080 2110 41300 2400	MS % Rec 110 104 99 105	mits 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 85-115 10 9 11 4 10 9 11 4 10 9 11 10 11 10 10 11 10 10 10 10	V2 × L 10 7 04 7 05 7 03 7 05 7 05 7 05 7 05 7 05 7	6 Rec imits 70-130 70-130 70-130 70-130 70-130	0 0 0 0 0	RPD 20 20 20 20 20 20 20	

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QUALITY CONTROL DATA

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

MATRIX SPIKE & MATRIX	SPIKE DUPLI	CATE: 3144	991		3144992							
Parameter	Units	30656888005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	ND	2000	2000	ND	10600	117	459	70-130		20	M1
Arsenic	ug/L	ND	2000	2000	ND	ND	61	61	70-130		20	M1
Barium	ug/L	1360000	2000	2000	1420000	1490000	3220	6520	70-130	5	20	M1
Calcium	ug/L	15700000	40000	40000	1640000 0	1720000 0	1880	3910	70-130	5	20	M1
Iron	ug/L	104000	2000	2000	110000	126000	307	1080	70-130	13	20	M1
Manganese	ug/L	5380	2000	2000	7860	11100	124	287	70-130	34	20	M1,R1
Sodium	ug/L	49100000	20000	20000	5100000 0	5300000 0	9530	19800	70-130	4	20	M1
Strontium	ug/L	4800000	2000	2000	4460000	5180000	-17000	19400	70-130	15	20	M1,N2

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QUALITY CONTROL DATA

Project:	JB/PLUTO INJEC	TION WELL								
Pace Project No.:	30656888									
QC Batch:	645276		Analysis M	SM 2540C-20						
QC Batch Method:	SM 2540C-2015		Analysis De	Analysis Description:			issol. Solid	s		
			Laboratory	:	Pace Analytic	al Sei	vices - Bea	aver		
Associated Lab Sar	mples: 30656888	001, 30656888002	, 30656888003,	30656888004	, 30656888005	5				
METHOD BLANK:	3144108		Matrix	k: Water						
Associated Lab Sar	mples: 30656888	001, 30656888002	, 30656888003,	30656888004	, 30656888005	5				
			Blank	Reporting						
Parameter U		Units	Result	Limit M		Analyz		ed	Qualifiers	
Total Dissolved Soli	ids	mg/L	NE) 10	0.0	5.0 01/30/24		09:35		
LABORATORY CO	NTROL SAMPLE:	3144109								
			Spike	LCS	LCS	%	6 Rec			
Parar	neter	Units	Conc.	Result	% Rec	L	imits	Qua	lifiers	
Total Dissolved Soli	ids	mg/L	50	46.0	92		80-118			
SAMPLE DUPLICA	TE: 3144110									
-			30656840001	Dup		Max RPD				
Parar	neter	Units	Result	Result	RPD	RPD			Qualifiers	
Total Dissolved Solids mg/L		mg/L	2030) 19	90	2		10		

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QUALITY CONTROL DATA

Project: Pace Project No.:	JB/PL 30656	UTO INJECT 8888	ION WELL												
QC Batch:	6474	127		Anal	ysis Metho	d: EPA 300.0, Rev 2.1									
QC Batch Method:	EPA	300.0, Rev 2	.1	Anal	ysis Descri	ption:	BVR 300.0	IC Anion	IS						
				Labo	oratory:		Pace Analy	tical Serv	vices - Beave	r					
Associated Lab Sa	mples:	306568880	01, 3065688800	2, 3065688	38003, 306	56888004,	306568880	05							
METHOD BLANK:	31545	572			Matrix: W	ater									
Associated Lab Sa	mples:	306568880	01, 3065688800	2, 3065688	38003, 306	56888004,	306568880	05							
				Bla	nk	Reporting									
Para	meter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	Qualifiers				
Bromide			mg/L		ND	0.1	0	0.034	02/08/24 22:	07					
Chloride			mg/L		ND	1.	0	0.25	02/08/24 22:	07					
Sulfate			mg/L		ND	5.	5.0 1.2 02/08/24 22:07			07					
LABORATORY CC	NTROL	SAMPLE:	3154573 Units	Spike Conc.	LC Res	-	LCS % Rec		Rec	Qualifiers					
					1				90-110	Qualifiero	_				
Bromide Chloride			mg/L mg/L		1 25	0.97 25.9	9 10		90-110 90-110						
Sulfate			mg/L		50	52.3	10		90-110						
MATRIX SPIKE & I	MATRIX	SPIKE DUPL	-ICATE: 3154			3154577	7								
			00050404004	MS	MSD		MOD		MOD	0/ D					
Paramete	\r	Units	30658461001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual		
	71												Quai		
Bromide Chloride		mg/L	<0.034 2.7	1 25	1 25	0.99 28.9	0.99 28.8		98 98 05 104		0 0	-			
Sulfate		mg/L mg/L	33.7	25 50	25 50	28.9 83.3	20.0 83.3		99 99		0				
Sullate		iiig/∟	55.7	50	50	00.0	00.0		33 33	30-110	0	20			
MATRIX SPIKE & I	MATRIX	SPIKE DUPL	-ICATE: 3154	578		3154579)								
				MS	MSD			_	_						
Paramete	r	L loito	30658889001 Booult	Spike	Spike	MS Booult	MSD Booult	MS % Rec	MSD	% Rec	חחם	Max RPD	Qual		
	;1	Units	Result	Conc.	Conc.	Result	Result			Limits	RPD		Qual		
Bromide		mg/L	< 0.034	1	1	0.98	0.98		97 97		0				
Chloride		mg/L	0.64J	25	25	26.9	26.9		05 105		0				
Sulfate		mg/L	265	50	50	287	287	4	44 44	90-110	0	20	M1		

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QUALITY CONTROL DATA

Project:	JB/PLUTO INJECTIO	N WELL								
Pace Project No.:	30656888									
QC Batch:	645232		Analysis Meth	ethod: SM 4500-H+ B-11						
QC Batch Method:	SM 4500-H+ B-11		Analysis Desc	ription:	4500H+BBV pl	H, BV				
			Laboratory:	I	Pace Analytical Services - Beaver					
Associated Lab Sar	mples: 30656888001	, 3065688800	2, 30656888003, 30	656888004,	30656888005					
	TE: 0142060									
SAMPLE DUPLICA	TE: 3143968		30656306011	Dup		Ma	av.			
Parameter			0000000011	Dup		1010	20			
Parar	meter	Units	Result	Result	RPD	RF	D Qualifiers			
Parar pH at 25 Degrees C		Units Std. Units	Result 8.0	Result 8.		0 RF	20 Qualifiers 20 H6,N2	_		
pH at 25 Degrees (<u> </u>							_		
	<u> </u>			8.			20 H6,N2	_		
pH at 25 Degrees C	<u> </u>		8.0			0	20 H6,N2	_		

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

Sample: INJECTATE PWS:	Lab ID: 3065 Site ID:	6888005 Collected: 01/26/24 11:10 Sample Type:	Received:	01/29/24 17:25	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Gross Alpha	EPA 900.0	1,449 ± 663 (909) C:NA T:NA	pCi/L	02/01/24 19:43	3 12587-46-1	
Gross Beta	EPA 900.0	1,390 ± 735 (1,191) C:NA T:NA	pCi/L	02/01/24 19:43	3 12587-47-2	
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	1,623 ± 271 (16.5) C:NA T:89%	pCi/L	02/19/24 13:01	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	1,148 ± 220 (58.9) C:88% T:82%	pCi/L	02/15/24 15:29	9 15262-20-1	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JB/PLUTO INJEC	TION WELL									
Pace Project No.:	30656888										
QC Batch:	645674	Analysis Method:	EPA 900.0	EPA 900.0							
QC Batch Method:	EPA 900.0	Analysis Description:	900.0 Gross Al	pha/Beta							
		Laboratory:	Pace Analytical	I Services - Greensbur	g						
Associated Lab Sar	mples: 30656888	005									
METHOD BLANK:	3146067	Matrix: Water									
Associated Lab Sar	mples: 30656888	005									
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers						
Gross Alpha		-0.015 ± 0.625 (1.77) C:NA T:NA	pCi/L	02/02/24 08:40							
Gross Beta 0.373 ± 0.63		0.373 ± 0.637 (1.44) C:NA T:NA	pCi/L	02/02/24 08:40							

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QUALITY CONTROL - RADIOCHEMISTRY

Project:	JB/PLUTO INJEC	TION WELL								
Pace Project No.:	30656888									
QC Batch:	647673		Analysis Method:	EPA 903.1						
QC Batch Method:	EPA 903.1		Analysis Description:	903.1 Radium-2	226					
			Laboratory:	Pace Analytical	Services - Greensbu	rg				
Associated Lab Sar	mples: 30656888	005								
METHOD BLANK:	3156317		Matrix: Water							
Associated Lab Sar	mples: 30656888	005								
Parar	neter	Act ± Unc	(MDC) Carr Trac	Units	Analyzed	Qualifiers				
Radium-226 0.35		0.350 ± 0.327 (0.46	64) C:NA T:88%	pCi/L	02/19/24 13:01					

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QUALITY CONTROL - RADIOCHEMISTRY

Project:	JB/PLUTO INJEC	TION WELL							
Pace Project No.:	30656888								
QC Batch:	647674	Analysis Method:	EPA 904.0						
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228						
		Laboratory:	Pace Analytical	l Services - Greensbu	ırg				
Associated Lab Sar	mples: 30656888	3005							
METHOD BLANK:	3156322	Matrix: Water							
Associated Lab Sar	mples: 30656888	3005							
Parar	neter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers				
Radium-228 0.6		0.628 ± 0.366 (0.672) C:87% T:81%	pCi/L	02/15/24 12:13					

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QUALIFIERS

Project: JB/PLUTO INJECTION WELL

Pace Project No.: 30656888

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- 1c Conductivity recording and ratio caused the sample to be ran at a minimal volume. TMB 2/1/24
- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- H6 Analysis initiated outside of the 15 minute EPA required holding time.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A
- complete list of accreditations/certifications is available upon request.
- R1 RPD value was outside control limits.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Pace Project No.: 30656888

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30656888001	SE	EPA 200.2	645465	EPA 200.7	645709
30656888002	NE	EPA 200.2	645465	EPA 200.7	645709
30656888003	NW	EPA 200.2	645465	EPA 200.7	645709
30656888004	SW	EPA 200.2	645465	EPA 200.7	645709
30656888005	INJECTATE	EPA 200.2	645465	EPA 200.7	645709
30656888001	SE	SM 2540C-2015	645276		
30656888002	NE	SM 2540C-2015	645276		
30656888003	NW	SM 2540C-2015	645276		
30656888004	SW	SM 2540C-2015	645276		
30656888005	INJECTATE	SM 2540C-2015	645276		
30656888001	SE	EPA 300.0, Rev 2.1	647427		
30656888002	NE	EPA 300.0, Rev 2.1	647427		
30656888003	NW	EPA 300.0, Rev 2.1	647427		
30656888004	SW	EPA 300.0, Rev 2.1	647427		
30656888005	INJECTATE	EPA 300.0, Rev 2.1	647427		
30656888001	SE	SM 4500-H+ B-11	645232		
30656888002	NE	SM 4500-H+ B-11	645232		
30656888003	NW	SM 4500-H+ B-11	645232		
30656888004	SW	SM 4500-H+ B-11	645232		
30656888005	INJECTATE	SM 4500-H+ B-11	645232		
30656888005	INJECTATE	EPA 900.0	645674		
30656888005	INJECTATE	EPA 903.1	647673		
30656888005	INJECTATE	EPA 904.0	647674		

Company Name/Address: North Central Engineer	ing LLC	Billing Ir Same	nformation:						nalysis /					1	1	Chain of Custody	Page of	
P.O. Box 628 Bridgeport, WV 26330	x 628			Pres												PEOPLE ADVANCING SCIENCE		
Report to: Joshua Cook		Email To: Jcook@northcentralengineering.com					55688	8					10000		Phone: 615-758-5858 Submitting a sample v	ia this chain of custody		
Project Description: JB/Pluto Injection Well		City/State Collected:	Ritchie/	WV	Please C ET	Circle:			СТА	TE	: 0	A R	ЛО			constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas- standard-terms.pdf		
Phone: 3042991583	Client Project # JB		Lab Project #						11				/			SDG #		
Collected by (print): Joshua Cook	Site/Facility ID #		P.O. #													Table # Acctnum:		
Collected by (signature): Immediately Packed on Ice N Y	Rush? (Lab MU Same Day Next Day Two Day Three Day		ve Day Day (Rad Only) Date Results Needed			Attached								n en de la constante de la const	Template: Prelogin: PM: PB:			
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Cntrs	See									Shipped Via: Remarks	Sample # (lab only)	
SE	Grab	GW		1-26-24	9:45													
NE	Grab	GW		1-26-24	10:09				-									
NW	Grab	GW		1-26-24	10:31		Sec. 20											
sw	Grab	GW		1-26-24	10:55					116		- Sec.						
INJECTATE	Grab	GW		1-26-24	11:10													
													1 1 .	ymb	8	ORMANCE Containg	5	
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other	Remarks: Samples returned vi UPSFedEx								pH . Flow		Temp			COC Bott Corre	Seal P Signed les ar ect bo	Die Receipt C resent/Intact /Accurate: rive intact: ttles used: volume sent: If Applicab	:NPYN YN YN YN YN	
Relinquished by : (Signature)	Date		Time:		ig # ed by: (Signa MM/Pf	ture) FCE	1/291	21	Trip Blan	k Receiv		/No CL/M	еоН	Pres	ervati	eadspace: on Correct/Ch <0.5 mR/hr:	YN	
Relinguished by : (Signature)	Date		Time:	Receiv	ed by: (Signa	ture) (400 - Po		Temp: (0.9°0	TB Bottles		ved:	If pre	servatio	n required by Lo	gin: Date/Time	
Relinguished by : (Signature)		12424	Time:	Receive	d so lab by:	(Signatu		and in case of the local division in which the local division in t	Date:	-8-	Time:			Hold:			Condition: Nage 20 Kof 3	

Stream Samples	Injectate
Chloride	Chloride
Bromide	Bromide
Strontium	Strontium
Barium	Barium
iron	Iron
Manganese	Manganese
Aluminum	Aluminum
Arsenic	Arsenic
Sodium	Sodium
Calcium	Calcium
Sulfate	Sulfate
PH	Specific Gravity
Total Dissolved Solids (TDS)	РН
	Total Dissolved Solids (TDS)
	Radium-226 and Radium 228

Gross Alpha and Gross Beta

DC#_Title: ENV-FRM-BEAV-0058 v03_Pace WV Sam Effective Date: 2/8/2023	ple Co	onditio	n Upo	PM: NMY Due Date: 02/20/24
LIMS30 Lab Sample Condition Upon Re	ećei	pt (Wes	St Virgin CLIENT: NORTHCENENG
Courier: Ced Ex UPS USPS Client] 3rd Pa	arty Co	urier	Pace Other
Tracking #: Custody Seal on Cooler/Box/Containers Present: yes				Seals intact: ves the
428		of Ice:	(Mot) . –
Thermometer Used 4705	7 フ	° C		
Cooler Temperature Observed Temp	-		Corre	ection Factor: °C Final Temp: °C pH paper Lot# Date and Initials of person examining
Thermal Preservation Requirement Met Yes 🗹 No 🗌				$\begin{array}{c} 226322 \\ \text{contents:} \underline{2C1-29-24} \end{array}$
	Yes	No	N/A	1
Chain of Custody Present:	V			1.
Chain of Custody Filled Out:	1			2.
Chain of Custody Relinquished:	V			3.
Sampler Name & Signature on COC:	1		1/201	4.
Sample Labels match COC:	~			5.
-Includes date/time/ID Matrix:	N		<u> </u>	
Samples Arrived within Hold Time:	V		-	6.
Short Hold Time Analysis (<72hr remaining):		V		7.
Rush Turn Around Time Requested:		-	1	8.
Sufficient Volume:	~	Ĺ		9.
Correct Containers Used:	1			10.
-Pace Containers Used:	~			
Containers Intact:	0			11.
Orthophosphate field filtered:			~	12.
Hex Cr Aqueous sample field filtered:			~	13.
-pH adjusted within 24 hours? (If yes, indicate acid lot #)			1	
Filtered volume received for Dissolved tests:			~	14.
All containers have been checked for chemical preservation:	V]		15.
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous mate	ix			
All containers meet method/chemical preservation requirements:	\checkmark			Initial when 2C Date: 1-29-24
				Tests not preserved:
Headspace in VOA Vials:				16.
Trip Blank Present:			1	17.
				Initial when completed: DC Date: 1-29-24
Comments:				

*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

Email To: Email To: Joook@northcentralengineering.cc Joook@northcentralengineering.cc Joook@northcentralengineering.cc Joook@northcentralengineering.cc Clty/State Ritchie/ WV Five bay Clty/State Ritchie/ WV Five bay	ing,	Company Name/Address: North Central Engineering, LLC	Same	Billing Information: Same			Pres		Analy Analy	Analysis / Container / Preservative	r / Preservati		- Chai	Chain of Custody	Pageof
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Cuberier Contract Endencing Collection 10 Fragets 10 Fragets 10 Fragets 10 Fraget			Email To: Jcook(porthce	Intralengi	ineering.co	<u> </u>	ē A				<u></u>	1206 Phon Subb	55 Lebanon Rd Mou ne: 615-758-5858 Alt: mitting a sample via t	unt Juliet, TN 37122 : 800-767-5859 Shis chaln of custody
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Flow Other Bottles arrive intact: Y Courier Tracking # Tracking # Correct bottles used: Y Courier Time: Received by: (Signature) 1/29/24 Trip Blank Received: Yes/NO Persestration Correct/Checked: Yes/NO P-2 1 $1/1$; Y % $MM/PACE$ $1/29/24$ Trip Blank Received: Yes/NO Persestration Correct/Checked: Yes/NO P-2 1 $1/1$; Y % $MM/PACE$ $1/2, 4/24$ Time: Received by: (Signature) $1/2, 9/24$ Trip Blank Received: Yes/NO Persestration Correct/Checked: Yes/NO You zero induction Correct/Checked: Yes/NO P124 $1/1$; Y % $MM/PACE$ $1/2, 4/24$ Time: Received by: (Signature) YON Persestration Correct/Checked: Yes/NO You zero induction Correct/Checked: Yes/NO You zero induction	Remarks:									На	Temp		<u>Sample R</u> eal Preser ligned/Accu	5 8	List VPY
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Image: Received by: (Signature) 1/29/24- Trip Blank Received: Yes/No Preservation Correct/Checked: Yes 29/24 11:43 3M/M/PACE 11.43 11.43 RAD Screen. 5. mR/hr:: Yes Yes 29/24 11:43 700 7°C Bottles Received: If preservation required by Login: Date/fim 1 2.4/24 1.4.00 Received by: (Signature) 0.0	- UPS - F	edEX(Durier		Trackin	#0						Sulf 1	cient volu <u>If</u>	Applicable	и
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Stream Samples	Injectate
Chloride	Chloride
Bromide	Bromide
Strontium	Strontium
Barium	Barium
Iron	Iron
Manganese	Manganese
Aluminum	Aluminum
Arsenic	Arsenic
Sodium	Sodium
Calcium	Calcium
Sulfate	Sulfate
РН	Specific Gravity
Total Dissolved Solids (TDS)	PH
	Total Dissolved Solids (TDS) Radium-226 and Radium 228 Gross Alpha and Gross Beta

DC#_Title: ENV-FRM-BEAV-0058 v03_Pace WV Sam Effective Date: 2/8/2023	ple Co	onditio	n Upc	Din Receipt (SOUE) UO#: 30656888
LIMS30 Lab Sample Condition Upon Re	eceij	pṫ ('	Wes	PM: NMY Due Date: 02/20/24 St Virgin: CLIENT: NORTHCENENG
Courier: C Fed Ex C UPS USPS Client	3rd Pa	arty Co	urier	Pace Other
Tracking #:		/		
Custody Seal on Cooler/Box/Containers Present: 🔲 yes	∐ no	5	_	Seals intact: 🔲 yes 📴no
<u>цр</u>	Туре о	of Ice:	Wet	Blue None 1
Cooler Temperature Observed Temp	2_	۰C	Corre	ection Factor: C · c Final Temp: /. C · c
Thermal Preservation Requirement Met Yes No		•		pH paper Lot# Date and Initials of person examining 226322 contents: 2C 1-29-24
				
F	Yes	No	N/A	
Chain of Custody Present:				1.
Chain of Custody Filled Out:	~			2.
Chain of Custody Relinquished:	~			3.
Sampler Name & Signature on COC:	V			4.
Sample Labels match COC:	5	<u> </u>		5.
-Includes date/time/ID Matrix:			T .	
Samples Arrived within Hold Time:	-		F	6.
Short Hold Time Analysis (<72hr remaining):			├──	7.
Rush Turn Around Time Requested:		-		8.
Sufficient Volume:		<u> </u>		9.
Correct Containers Used:	-	<u> </u>		10.
-Pace Containers Used:	~			
Containers Intact:	~			11.
Orthophosphate field filtered:			<u> </u>	12.
Hex Cr Aqueous sample field filtered:			~	13.
-pH adjusted within 24 hours? (If yes, indicate acid lot #)				·
Filtered volume received for Dissolved tests:			<u>۲</u>	14.
All containers have been checked for chemical preservation:	$\overline{\nu}$			15.
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous mate	rix	~		
All containers meet method/chemical preservation requirements:	\checkmark			Initial when 2C Date: 1-29-24
				Tests not preserved:
Headspace in VOA Vials:				18.
Trip Blank Present:				17.
				completed: DC Date: 1-29-24
Comments:				

*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.

Pace Analytical



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Certificate of Analysis

February 07, 2024

Samantha Merrill PAS, LLC - Williamsport, PA 2829 Reach Road Williamsport, PA 17701

Dear Samantha Merrill,

Enclosed is your report of analysis that contains the result(s) of the sample(s) received on 1/31/2024. Please direct any questions or comments regarding the content of this report to your Proejct Manager.

Pace Analytical Services, LLC. is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and the analytical result(s) contained in this report meet those regulation requirements, except where noted. For example, all drinking water testing and/or analysis comply with the requirements in 40 CFR part 141. All wastewater testing and/or analysis comply with the requirements in 40 CFR part 141. All wastewater testing and/or analysis comply with the requirements in 40 CFR part 136. All Solid and Chemical Material testing and/or analysis complies with the requirements in SW-846. All quantitative solid result(s), unless otherwise indicated, are reported on a dry weight basis obtained by a percent moisture calculation.

Sample(s) that were collected by Pace Analytical Services, LLC. personnel are done in accordance with the latest revision of the laboratory's Field Sampling and Field Analysis Standard Operating Procedures. The result(s) contained within this report are representative of the sample(s) as received. Any and all information provided to us by the client was not performed by Pace Analytical Services, LLC. and is not within our scope of accreditation. Any abnormalities in how the sample(s) were received are noted in the documentation contained herein.

All information contained within this report is the property of Pace Analytical Services, LLC. and that of the client. This report may not be reproduced in any form without prior consent from either an authorized representative of Pace Analytical Services, LLC. or the client for which this report was intended. If required, this report must be reproduced in its entirety. Pace Analytical Services, LLC. is not responsible for the use or interpretation of the data included herein.

Please visit www.pacelabs.com for a complete list of our accredited parameters and other topics of interest.

Regards,

Pace Analytical Services, LLC.



Approved by:

Rebecco E. Fink

Rebecca E. Fink, Project Manager PA Lab ID: 41-00034 • Maryland Certificate #: 202 • Delaware Office of Drinking Water • NY State Lab ID: 12028

Work Order: 2400430

Project: General

Table of Contents

Certificate of Analysis/Cover Letter	1
Sample Summary	3
Analytical Results	4
Quality Control Results	5
Notes and Definitions	6
Work Order/COC PDF	7





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PAS, LLC - Williamsport, PA

2829 Reach Road

Project: General

Project Number: 30656888

Williamsport, PA 17701

Reported: 02/07/2024 09:16

Sample Summary

Lab ID	Sample	Matrix	Sampled	Received
2400430-01	INJECTATE	Non-Potable Water	01/26/2024 11:10	01/31/2024 13:11



WO# 2400430 Page 29 of 38 Page 3 of 12



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	2829 Reach R	oad, Williams	oort, PA 177	01 • Phone:	(570) 326-4001	l • Fax: (570) 32	6-0399 • www. <mark>p</mark>	acelabs.com	
PAS, LLC - Willi	amsport, PA				Projec	t: General			
2829 Reach Roa	ad			Р	roject Numbe	r: 30656888			
Williamsport, PA	17701				Reported	d: 02/07/2024	09:16		
			Д	nalyti	cal Res	sults			
Sample ID:	INJECTATE						Sampled:	01/26/2024 11:10	
Lab ID:	2400430-01						Received:	01/31/2024 13:11	
Matrix:	Non-Potable V	/ater							
Analyte		Result	Units	Qualifier	Reporting Limit	Prepared	Analyzo	ed Method	Analyst
General Chen	nistry								
Specific Gravity		1.099	SU			2/5/24 15:26	2/5/24 1	5:36 SM 2710 F	ALK







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PAS, LLC - Williamsport, PA

2829 Reach Road

Project Number: 30656888

Williamsport, PA 17701

•

Project: General

Reported: 02/07/2024 09:16

Quality Control

General Chemistry

Analyte	Result	Qualifier	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 4B05004 - Wet Chem	Prep									
LCS (4B05004-BS1)					Prepared & A	nalyzed: 02/05	5/2024			
Specific Gravity	0.9970			SU				98.6-101		
Duplicate (4B05004-DUP1)	9	Source: 2400	430-01		Prepared & A	nalyzed: 02/05	5/2024			
Specific Gravity	1.112			SU		1.099			1.18	3.64







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2829 Reach Road, Williamsport, PA 17701 • Phone: (570) 326-4001 • Fax: (570) 326-0399 • www.pacelabs.com

PAS, LLC - Williamsport, PA

2829 Reach Road

Williamsport, PA 17701

Project: General

Project Number: 30656888

Reported: 02/07/2024 09:16

Notes and Definitions

Item	Definition
ND	Not Detected at or above the Minimum Reporting Limit
Reporting Limit	This value represents the minimum concentration that the target analyte can be identified and quantitated with confidence



WO# 2400430 Page 32 of 38 Page 6 of 12

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PASI Pittsburgh Laboratory	Workorder: 30020000 Renort (Invoice To	Nikayla M. Yasurek Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3,4 Greensburg, PA 15601 Phone (724)850-5600 Email: nikayla.yasurek@pacelabs.com	Send Invoice To: invoices@pacelabs.coupahost.com State of Sample Origin: WV	Sample ID	INJECTATE							Ń			Cooler Temperature on Receipt			
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	:52	North Central Engineering, LLC P_0. Box 628	Bridgeport, WV 26330			i Well				×												F - Filter B - Bloassay				ttūfe)
	Company Name/Address:	Central x 628	port, W	f	Cook	Project Description: JB/Pluto Injection Well	Phone: 3042991583	y (print): Cook	Collected by (signature):		nple II					ATE						-	ing Water	Relinquished by : (Signature)	JAN Sheet by : (Signature) JANN/PACE	Relinguisted by : [Signeture)
	Company 1	North Centra P.O. Box 628	Bridge		Report to: Joshua Cook	Project De JB/Pluto	Phone: 3 (Collected by (print): Joshua Cook	Collected b	Immediately Packed on Ice N		SE	<u> </u>	MN	SW	INJECTATE						* Matrix: SS - Soil AIR - Air GW - Groundwater MM - Westenhistor	DW - Drinking Water DT - Other	Relfnquish A		Relinguish

Stream Samples	Injectate
Chloride	Chloride
Bromide	Bromide
Strontium	Strontium
Barium	Barium
Iron	Iron
Manganese	Manganese
Aluminum	Aluminum
Arsenic	Arsenic
Sodium	Sodium
Calcium	Calcium
Sulfate	Sulfate
РН	Specific Gravity
Total Dissolved Solids (TDS)	РН
	Total Dissolved Solids (TDS)
	Radium-226 and Radium 228

Gross Alpha and Gross Beta

INJE	СТ		ΓE	SAMPLE	
DC#_Title: ENV-FRM-BEAV-0058 v03_Pace WV Sam Effective Date: 2/8/2023	ple Co	nditio	n Upo	MU#; PM: NMY	30656888 Due Date: 02/2
IMS30 Lab Sample Condition Upon R	eceir	5t (\	Nes	t Virgin	ORTHCENENG
] 3rd Pa	irty Cot	irier (Pace Other	
racking #: Custody Seal on Cooler/Box/Containers Present; 🎒 yes	The			Seals intact:	yes Cino
147 C	Type c		Wet	N	ي بينيون بينيون بينيون المعادة ليسبيان بينيونين المعاد المعاد ال
Thermometer Used 4700		Tice;	مسار		inal Temp: 1.2. c
Cooler Temperature Observed Temp			Corre		and Initials of person examining
nermal Preservation Requirement Met Yes 🗹 No 🗌				226322 **	ntents: 2C 1-29-24
an a	Yes	No	N/A		
Chain of Custody Present			<u> </u>	1	
Chain of Custody Filled Out:	~		ļ	2.	un en
Chain of Custody Relinguished:	1			3.	
Sampler Name & Signature on COC:	V			4.	
Sample Labels match COC:			<u>.</u>	5.	
-Includes date/time/ID Matrix		/ F****	F		
Semples Arrived within Hold Time:			<u>k</u>	6.	4
Short Hold Time Analysis (<72hr remaining):			1	7. 	······································
Rush Turn Around Time Requested:	 	-		8.	
Sufficient Volume:	+ >	<u>k</u>	 	9.	
Correct Containers Used:	Ľ	<u> </u>	<u> </u>	10.	
-Pace Containers Used:		<u>}</u>			
Containers Intact	1			11. 	
Orthophosphate field filtered:	:	<u> </u>		12.	
Hex Cr Aqueous sample field filtered:				13.	:
-pH adjusted within 24 hours? (If yes, Indicate acid lot #)		<u> </u>	12	، ا المراجعة المراجعة المراجع الم	
Filtered volume received for Dissolved tests:		Į		14.	
All containers have been checked for chemical preservation:	1	<u> </u>		15.	
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous ma	trix				
All containers meet method/chemical preservation requirements		1		Initial when 2C Date:	1-29-24
: 			<u>.</u>	Tests not preserved:	
Headspace in VOA Vials:				16	
Trip Blank Present	l.	L	~	17.	, <u>,</u>
				completed: <i>DC</i> Date:	1-29-24
Comments:	· · · ·	i, ii			
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Table of Contents

Page 11 of 12

Pace.

DC#_Title: ENV-FRM-GBUR-0176 v01_Subcontracting Directions

Effective Date: 6/15/2023

Subcontracting Laboratory: Pace Williamsport

Project Must Arrive at Subcontracted Laboratory by: 1/30/24

Saturday delivery

Project Number: 30656888

Today's Date: ______

Sample ID	Matrix	Send Whole Jar (size/type)	Split / Pour Off from This Jar:	Volume to Send (if split off)
005	WT		BP1U	WGFU (enough volume for
				specific gravity)

		- 		
				· · · · · · · · · · · · · · · · · · ·
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Completed by: (Initials) NMY	Date/Time:	Shipped Verification Stamp
Reviewed by: (PM Initials)	Date/Time:	
Received by SR: (Initials)	Date/Time:	
Packed by:(Initial/Date)	_Verified by:(Initial/Date)	

Pace Analytical [®] Client Name:	Pac	e k	itte	burgh	Project # <u>2100430</u>
ourier: KFed Ex UPS USPS Client		omme	rcial	Pace Other	Label
acking #:					LIMS Login
stody Seal on Cooler/Box Present: Uyes	And	•	Seals i	ntact: 🗌 yes	Zno
hermometer Used	Туре с	f Ice:	Ŵ	Blue None	
ooler Temperature Observed Temp	4	۰C	Corre	ction Factor:	°C Final Temp: 1.4 °C
mp should be above freezing to 6°C					
				pH paper Lot#	Date and Initials of person examining contents:
omments:	Yes	No	N/A	<u> </u>	• •
hain of Custody Present:	X			1	
hain of Custody Filled Out:	X			2.	
hain of Custody Relinquished:	X	,		3.	
ampler Name & Signature on COC:		$ $ \times		4	
ample Labeis match COC:	\times			5.	
-Includes date/time/ID Matrix:	NT				۰.
amples Arrived within Hold Time:	$ \times$			6	
hort Hold Time Analysis (<72hr remaining):		X].	7.	
tush Turn Around Time Requested:		X		8.	,
Sufficient Volume:	X			9.	
Correct Containers Used:	X			10.	
-Pace Containers Used:	X	1			·
Containers Intact:	X			11.	
Orthophosphate field filtered			$ \times$	12.	
Hex Cr Aqueous sample field filtered			K	13.	
Organic Samples checked for dechlorination:			X	14.	
Filtered volume received for Dissolved tests			X	15.	
All containers have been checked for preservation.			X	16.	
exceptions: VOA, coliform, TOC, O&G, Phenolics Non-aqueous matrix	Radon	,			
All containers meet method preservation			X	Initial when	Date/time of
requirements.	I	1	1	completed Lot # of added	preservation
	· · · · · · ·	- r		preservative	
Headspace in VOA Vials (>6mm):		<u> </u>		47.	
Trip Blank Present:		<u> </u>	X	18.	
Trip Blank Custody Seals Present			$ $ \times		
Rad Samples Screened < 0.5 mrem/hr			X	Initial when completed:	Date:
Client Notification/ Resolution:			<u> </u>		
Person Contacted:			Date	Time:	Contacted By:
Comments/ Resolution:					
· · · · · · · · · · · · · · · · · · ·			•		
<u> </u>					

 \square A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

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Wells Serviced by Injection Wells

API #	Operator	Producing Formation
47-085-09276	Jay-Bee Oil & Gas, Inc.	Devonian
47-017-05717	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-05389	Jay-Bee Oil & Gas, Inc.	Marcellus
47-085-02239	Jay-Bee Oil & Gas, Inc.	Injun
47-085-09699	Jay-Bee Oil & Gas, Inc.	Injun
47-085-08699	Jay-Bee Oil & Gas, Inc.	Injun
47-085-08800	Jay-Bee Oil & Gas, Inc.	Injun
47-085-09094	Jay-Bee Oil & Gas, Inc.	Injun
47-085-02279	Jay-Bee Oil & Gas, Inc.	Injun
47-085-09133	Jay-Bee Oil & Gas, Inc.	Injun
47-085-09134	Jay-Bee Oil & Gas, Inc.	Injun
47-085-09135	Jay-Bee Oil & Gas, Inc.	Injun
47-085-02280	Jay-Bee Oil & Gas, Inc.	Injun
47-085-02404	Jay-Bee Oil & Gas, Inc.	Injun
47-085-02405	Jay-Bee Oil & Gas, Inc.	Injun
47-085-02517	Jay-Bee Oil & Gas, Inc.	Injun
47-085-02550	Jay-Bee Oil & Gas, Inc.	Injun
47-085-08625	Jay-Bee Oil & Gas, Inc.	Injun
47-085-08701	Jay-Bee Oil & Gas, Inc.	Injun
47-017-05712	Jay-Bee Oil & Gas, Inc.	Receivercellus
47-017-05713	Jay-Bee Oil & Gas, Inc.Offi	ce of Marcellas
47-017-05870	Jay-Bee Oil & Gas, Inc.	MAR 3 OMAticellus
47-017-05658	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-05659	Jay-Bee Oil & Gas, Inc.	Gordon
47-017-05929	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-05952	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-05971	Jay-Bee Oil & Gas, Inc.	Marcellus
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WV Department of Environments? Protection

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Promoting a healthy environment.

Wells Serviced by Injection Wells

API #	Operator	Producing Formation	
47-017-05928	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-05968	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-06030	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-05992	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-05991	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-05969	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-05970	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-05996	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-05997	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02020	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02025	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02026	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02052	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02053	Jay-Bee Oil & Gas, Inc.	Marcellus]
47-103-02500	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-103-02502	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02051	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02082	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02081	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-06022	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-017-06023	Jay-Bee Oil & Gas, Inc.	Marcellus	Received
47-095-02085	Jay-Bee Oil & Gas, Inc.	Marcellus C	flice of Oil & Gas
47-095-02084	Jay-Bee Oil & Gas, Inc.	Marcellus	MAR 30 2016
47-095-02083	Jay-Bee Oil & Gas, Inc.	Marcellus	_
47-095-02092	Jay-Bee Oil & Gas, Inc.	Marcellus	RECEIVED Office of Öil and Gas
47-095-02094	Jay-Bee Oil & Gas, Inc.	Marcellus	NOV 0 6 2023
47-095-02091	Jay-Bee Oil & Gas, Inc. ecessary and include page numbers	Marcellus	WV Department of

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Wells Serviced by Injection Wells

API #	Operator	Producing Formation	
47-095-02098	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02097	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02096	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02024	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02133	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02140	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02135	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02136	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02137	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02138	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02139	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02141	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02142	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02160	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02161	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02144	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02145	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02146	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02191	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02190	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02168	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02050	Jay-Bee Oil & Gas, Inc.	Marcellus Marcellus	Received
47-095-02101	Jay-Bee Oil & Gas, Inc.	Marcellus	Gas
47-095-02100	Jay-Bee Oil & Gas, Inc.	Marcellus	AR 30 2016
47-095-02102	Jay-Bee Oil & Gas, Inc.	Marcellus	
47-095-02105	Jay-Bee Oil & Gas, Inc.	Marcellus	DEst
47-095-02106	Jay-Bee Oil & Gas, Inc.	Marcellus	RECEIVED Office of Oil and Ga

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WV Department of Environmental Protection

Wells Serviced by Injection Wells

API#	Operator	Producing Formation
47-095-02107	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02108	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02117	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02116	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02115	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02123	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02134	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02149	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02150	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-06437	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-06738	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02147	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02148	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-06545	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-06546	Jay-Bee Oil & Gas, Inc.	Marcellus
47-017-06547	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02223	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02225	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02226	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02227	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02228	Jay-Bee Oil & Gas, Inc.	Marcellus
47-095-02229	Jay-Bee Oil & Gas, Inc.	Marcellus Received
47-095-02230	Jay-Bee Oil & Gas, Inc.	Marcellus Office of Oil & Gas
Dopey 3	Jay-Bee Oil & Gas, Inc.	Marcellus Pending MAR 3 0 2016
Dopey 6	Jay-Bee Oil & Gas, Inc.	Marcellus Pending
Dopey 7U	Jay-Bee Oil & Gas, Inc.	Uticia Pending
RPT8-4	Jay-Bee Oil & Gas, Inc.	Marcellus Pending NOV 0 6 2023
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WV Department of Environmental Protection



Wells Serviced by Injection Wells

API#	Operator	Producing Formation	
RPT8-4U	Jay-Bee Oil & Gas, Inc.	Uticia Pending	
Larry 2	Jay-Bee Oil & Gas, Inc.	Marcellus Pending	
Larry 2U	Jay-Bee Oil & Gas, Inc.	Uticia Pending	
Larry 3U	Jay-Bee Oil & Gas, Inc.	Uticia Pending	
Moe 3U	Jay-Bee Oil & Gas, Inc.	Uticia Pending	
Moe 4	Jay-Bee Oil & Gas, Inc.	Marcellus Pending	
	Jay-Bee Oil & Gas, Inc.		
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Make as many copies as necessary and include page numbers as appropriate.

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SAFETY DATA SHEET

SECTION 1 : IDENTIFICATION

Product identifier used on the label:
Product Name:
SOS Manufacturer Number:

Produced Brine Water 401320

Other means of identification:

Recommended use of the chemical and restrictions on use: Product Use/Restriction: Process Water

Manufacturer Name:	Conoco Phillips
Address:	600 N. Dairy Ashford Houston, TX 77079-1175
Website:	www.conocophillips.com
General Phone Number:	855-244-0762E-mail: SDS@condcophillips.com

Emergency phone number: Emergency Phone Number:

Chemtrec: 800-424-9300 (24 Hours)

SECTION 2 : HAZARD(S) IDENTIFICATION

<u>Classification of the chemical in accordance with CFR 1910.1200(d)(f):</u>		
Signal Word:	Not applicable.	
GHS Class:	Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200	

Hazards not otherwise classified that have been identified during the classification process:

Information related to product mixture

Cardnogenicity:	Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.
Signs/Symptoms:	Overexposure from ingestion can result in nausea, vomiting, diarrhea, abdominal cramps, and dehydration (thirst).

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

<u>Mixtures:</u> Chemical Name	CA S#	Ingredient Percent	EC Num.
Water (Process)	7732-18-5	> 90 %	
Sodium Chloride	7647-14-5	< 10 %	
Notes :	¹ All concentrations are percent by weight by volume.	unless ingredient is a gas. Gas œ	oncentrations are in percent

SECTION 4 : FIRST AID MEASURES		
Skin Contact:	First aid is not normally required. However, it is good practice to wash any chemical from the skin.	
Inhalation:	(Breathing): First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.	

Ingestion:

(Swallowing): First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Notes

Most important symptoms and effects: None known or anticipated. None known or anticipated.

SECTION 5 : FIRE FIGHTING MEASURES

Suitable and unsuitable extinguishing media:

Suitable Extinguishing Media: Use extinguishing agent suitable for type of surrounding fire.

Specific hazards arising from the chemical:		
Hazardous Combustion Byproducts:	None anticipated,	
Unusual Fire Hazards:	No unusual fire or explosion hazards are expected. If container is not properly cooled, it can rupture in the heat of a fire.	
Fire Fighting Instructions:	For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective dothing. When the potential chemical hazard is unknown, in endosed or confined spaces, a self contained breathing apparatus should be wom. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).	
	Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely, Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely.	
NFPA Ratings: NFPA Health: NFPA Flammability: NFPA Reactivity:		
Notes :	NFPA 704 Hazard Class: (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)	
	See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits	

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures;		
Personnel Precautions:	Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.	
Environmental precautions:		
Environmental Precautions:	Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.	
Methods for deanup?	Notify relevant authorities in accordance with all applicable regulations. Immediate deanup of any spill is recommended, Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.	
	Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.	

SECTION 7 : HANDLIN	G and STORAGE
Precautions for safe han	<u>dina:</u>
Handling:	Precautions for safe handling: Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).
	Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated dothing or shoes.
<u>Conditions for safe stora</u>	ge, including any incompatibilities;
Storage:	Conditions for safe storage: Keep container(s) tightly dosed and properly labeled. Use and store this material in cool, dry, well-ventilated areas. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE GUIDELINES:

Produced Brine Water Revision:: 10/08/2015 Product Code: 401320

Information related to product mixture :

Guideline Info:	State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.
Appropriate engineering controls:	
Engineering Controls:	If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.
Individual protection measures:	
Eye/Face Protection:	The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.
Skin Protection Description:	The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals.
Respiratory Protection:	Emergencies or conditions that could result in significant airborne exposures may require the use of NIOSH approved respiratory protection. An industrial hygienist or other appropriate health and safety professional should be consulted for specific guidance under these situations.
	A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.
Notes :	Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES:

Physical State:	Appearance: Clear Form: Liquid
Odort	Salty
Odor Threshold:	No Data
Boiling Point:	Initial: 212 deg F/100 deg C
Melting Point:	No Data
Specific Gravity:	(Water=1): 1.1 @ 68 deg F/20 deg C
Solubility:	Complete
Vapor Density:	(AIR=1): > 1
Vapor Pressure:	< 0,36 psia @ 70 deg F/21,1 deg C
Evaporation Rate:	(nBuAc=1): No data
pH:	No Data
Coefficient of Water/Oll Distribution:	(n-octanol/water) (Kow): No data
Flash Point:	Not Applicable
Lower Flammable/Explosive Limit:	(vol % in air): Not applicable
Upper Flammable/Explosive Limit:	(vol % in air): Not applicable
Auto Ignition Temperature:	No Data
9.2. Other information:	
Nates :	Note: Unless otherwise stated, values are determined at 20 deg C (68 deg F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

SECTION 10 : STABILITY and REACTIVITY

Chemical Stability:	
Chemical Stability:	Stable under normal ambient and anticipated conditions of use.
Possibility of hazardous reactions:	
Hazardous Polymerization:	Not known to accur.
Conditions To Avoid:	
Conditions to Avoid:	None known.
Incompatible Materials:	
Incompatible Materials:	Materials to Avold: Avoid contact with materials that are incompatible with water.
Hazardous Decomposition Products	<u>.</u>
Spedal Decomposition Products:	Not anticipated under normal conditions of use.

SECTION 11 : TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Information related to product mixture :

Eye;	Causes mild eye irritation.
Skin:	Acute Toxicity: Skin Absorption: Hazard: Unlikely to be harmful LDS0 Data: > 2 g/kg (estimated)
	Not expected to be irritating.
Inhalation:	Acute Toxicity: Hazard: Unlikely to be harmful LCSO Data: > 5 mg/L (mist, estimated)
Ingestion:	Acute Toxicity: Ingestion (Swallowing): Hazard: Unlikely to be harmful LDS0 Data: > 5 g/kg (estimated)
Sensitization:	Skin Sensitization: Not expected to be a skin sensitizer. Respiratory Sensitization: No information available on the mixture, however none of the components have been classified for respiratory sensitization (or are below the concentration threshold for classification).
Carcinogenicity:	Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.
Mutagenicity:	Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.
Reproductive Toxicity:	Not expected to cause reproductive toxicity.
Other Toxicological Information:	Signs and Symptoms: Overexposure from ingestion can result in nausea, vomiting, diarrhea, abdominal cramps, and dehydration (thirst).
Target Organ Single Exposures:	Not expected to cause organ effects from single exposure.
Target Organ Repeated Exposures:	Not expected to cause organ effects from repeated exposure.
Aspiration:	Not an aspiration hazard.

SECTION 12 : ECOLOGICAL INFORMATION

Information related to product mixture :

Ecotoxicity:	
Ecotoxicity:	Not evaluated
Other adverse effects :	None anticipated.

SECTION 13 : DISPOSAL CONSIDERATIONS

Description of waste:

Information related to product mixture :

Waste Disposal:

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/dhemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical/dhemical could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard.

OT Shipping Name:	Shipping Description: Not regulated
	Note : Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable
FATA UN Number:	Not regulated
IMDG Shipping Name :	Shipping Description: Not regulated
CAO UN Number :	Not regulated

Safety, health and environmental regulations specific for the product:

Information related to product mixture :

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA TSCA Inventory Status: U.S. Export Control Classification Number: EAR99

TSCA 12(b) Export Notification:

Product Code: 401320

CERCLA Section 302:	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds): This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.
Section 311/312 Hazard Categories:	CERCLA/SARA - Section 311/312 (Title III Hazard Categories) Acute Health: No Chronic Health: No Fire Hazard: No Pressure Hazard: No Reactive Hazard: No
Section 313:	CERCLA/SARA - Section 313 and 40 CFR 372: This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.
	EPA (CERCLA) Reportable Quantity (in pounds): This material does not contain any chemicals with CERCLA Reportable Quantities.
California PROP 65:	Califomia Proposition 65: This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.
Other adverse effects :	None anticipated.

SECTION 16 : ADDITIONAL INFORMATION

HMIS Ratings:

HM1S Personal Protection:		Health Hazard
		Fire Hazard
		Reactivity
		Personal Protection
Other Information:	SDS Number: 401320	
SDS Revision Date:	October 08, 2015	
MSDS Revision Notes:	Supersedes: 02-Apr-2012 Format change	
Guide to Abbreviations:	ACGIH = American Conference of Governmental Industrial Hygienists; CA Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA Environmental Response, Compensation, and Liability Act; EPA = Environ Globally Harmonized System; IARC = International Agency for Research Institute for Health and Safety at Work; IOPC = International Oil Pollutio Explosive Limit; NE = Not Established; NFPA = National Fine Protection Ass Toxicology Program; OSHA = Occupational Safety and Health Administrat Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time V = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Informat	= The Comprehensive mental Protection Agency; GHS = on Cancer; INSHT = National on Compensation; LEL = Lower sociation; NTP = National ion; PEL = Permissible Exposure STEL = Short Term Exposure Weighted Average (8 hours); UEL ion System (Canada)
Disdəimer:	The information presented in this Material Safety Data Sheet is based of as of the date this Material Safety Data Sheet was prepared. HOWEVER MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY O OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS O ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORM SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No any damage or injury resulting from abnormal use or from any failure t practices. The information provided above, and the product, are furnish person receiving them shall make their own determination as to the sul particular purpose and on the condition that they assume the risk of th authorization is given nor implied to practice any patented invention wit	, NO WARRANIY OF JTHER WARRANTY IS EXPRESSED DF THE INFORMATION PROVIDED LATION OR THE PRODUCT, THE responsibility is assumed for a adhere to recommended ed on the condition that the itability of the product for their eir use. In addition, no

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Section 10 - Monitoring

PLAN FOR WELL FAILURES

The following summarizes the plan to address failure of any well to protect the surface environment and prevent migration of injected fluids into any USDW:

Disposal Well Contingency Plan

1. Monitoring and periodic routine investigative procedures will be performed on the injection wells as required by applicable laws, permits and regulations. Pertinent data will be reviewed regularly by qualified operators and forwarded to the agencies as required. Monitoring and testing will be designed to assure-well integrity and safe operation.

2. If a well fails required continuous monitoring or periodic testing standards, the well will be shut-in and the agency notified according to applicable regulations and permit conditions. After investigation into the cause for the failure, work plans will be prepared and reviewed with the regulators for repairing the problem.

3. If a workover is performed on a well, mechanical integrity testing will be conducted as required by applicable regulations before the well is returned to service. Copies of all work reports and logs will be forwarded to the regulatory agencies per applicable requirements.

4. During the period of time required for a well workover or for shut-ins due to MIT failure, the contingency plans of the facility will include the following:

a. If shut-in period is sufficiently brief, the fluids accumulated during this period of time will be routed to another well or held in storage at the facility.

aa. Facilities we will dispose at API 47-085-09721 in Ellenboro, Ritchie County, WV.

MONITORING PROGRAM

The monitoring program proposed for injection operations at this site focuses on the active injection wells themselves. A variety of data will be collected to monitor the injection well operations. This monitoring will take place through utilizing both periodic and continuous techniques.

Mechanical Integrity Testing

Testing of the annulus will be completed as determined by concern of well failure. Casing inspection logs may be conducted to investigate corrosion if it is determined to be necessary due to operational or regulatory concerns when tubing is already removed from the borehole during a workover or stimulation.

STEP RATE TEST

1. Should the 0.8 psi/ft. gradient not allow for sufficient injection pressure for injection operations, a higher pressure may be approved based upon a step-rate test. The Office would then approve up to 90% of the determined formation parting pressure or the maximum pressure reached during the step-rate test in which formation parting does not occur.

2. In order that step-rate test data is valid and supplies the required information needed for the Office to approve a higher injection pressure, the following procedures and equipment should be utilized for testing.

a. The test should be shut-in at least seventy-two (72) hours prior to testing to allow bottom-hole pressure to approach the formation pressure.

b. Test consists of a series of constant-rate injections which increase in a stepwise fashion. Rates should center around the proposed injection rate.

c. Injection periods should last sixty minutes for formations having a permeability of less than ten millidarcies and thirty minutes for formations having a permeability of greater than ten millidarcies.

- d. Test should consist of at least six injection periods.
- e. Injection rates should be controlled with a constant flow-rate regulator.

f. Flow rates should be measured with a turbine flowmeter and rate meter. A stopwatch should be used to check flow rates.

Calibrated pressure gages should be used for observing pressure at each rate at the Ø. surface on the flowing string and all annulus. Measurement of bottom-hole pressures is preferable but not necessary.

Test procedures along with injection rates and pressures are to be recorded and h. submitted to the Office along with a plot of the data.

3. Should there be a need to vary from this test procedure substantially; the Office should be contacted first for agreement of the test procedure.

Please notify the Office forty-eight (48) hours prior to testing to allow the Office the opportunity 4. to witness the test.

Continuous and Operational Monitoring

The proposed wells will have one long string protective casing extending into the injection interval with cement isolating all permeable intervals. The annulus pressure is to be continually monitored to detect any leaks in the tubing or casing. If leaks develop during injection, pressurized annulus fluid would be injected into the permitted injection interval, and injected fluids would not be able-to contact the production string casing above the permitted injection zone. Injectate should therefore have no potential for leakage into un-permitted formations.

Monitoring of physical parameters associated with injection operations will be conducted pursuant to state regulations. At a minimum the monitoring will include, injection pressure, annulus pressure, injection rate, injection volume, annulus level, and injectate characteristics. Details regarding this monitoring follow. Automatic shutdown capability will be operated to ensure that maximum pressure or minimum annulus differential requirements are not exceeded.

Annulus and Injection Pressure

Both the injection pressure and the annulus pressure are to be recorded continuously for each well. Electronic pressure transducers will be placed in pressure taps on the annulus system and injection flow lines. A signal will be sent from these transducers to a digital recorder and/or a chart recorder. The automated control system data will be visually inspected a minimum of once daily for anomalies when the well is operating. As part of the process and controls, the monitoring system will record maximum, minimum and average information. Differential pressures are to be obtained by comparison of simultaneous readings of the annulus and injection pressure transducer readings obtained for the wells.

Injection Rate and Volume

The flow rate to each well will be determined by a liquid flow meter designed for continuous monitoring. Flow rate is to be measured in the flow line to each well. The instrument will send signals to the process control system that calculates cumulative volume.

Annulus Tank Levels

The annulus tank in each well system will have sufficient reservoir capacity to accommodate the anticipated volume fluctuations due to operating temperature and pressure limitations. The annulus tank is to be equipped with an armored reflex sight glass, pressure relief valve and independent liquid fill nozzle. If any annulus fluid is added, it will be recorded by the well operators on an operator log sheet. Annulus tank level is to be recorded a minimum of weekly when injection occurs JANO 4-2817

Waste Characterization and Analysis

JAN 0.4 2017 Injectate characteristics will be monitored by collecting samples per the approved waste analysis plan entered as part of the administrative record for this permit. The waste analysis to be conducted is entered as part of the administrative record for this permit. The transmission of the administrative record for this permit. The transmission of the administrative data regarding average injectate chemical constituents. Tion

Section 11 - Groundwater Protection Plan (GPP)

APPENDIX H

GROUNDWATER PROTECTION PLAN

Facility Name: Pluto 1A

County: Ritchie

Facility Location:

Postal Serv	vice Address:	429 Simonton	Rd.		
		Ellenboro, WV	26337		
Latitude :	39.261592		Longitude:	-81.081835	

Contact Information:

Person:	Shane Dowell		
Phone N	umber:	304-628-3111	
E-mail A	ddress:	sdowell@jaybeeoil.com	

Date: 3-3-2016

1. A list of all operations that may contaminate the groundwater.

1. Injection of Brine water produced from local brine water wells, stored in tanks.

2. Diesel, engine oil, hydraulic oil from trucks on site for loading/unloading.

Diesel, engine oil, hydraulic oil from pumps on site for disposal.

2. A description of procedures and facilities used to protect groundwater quality from the list of potential contaminant sources above.

Loading and unloading of trucks will occur on a concrete pad, that is diked for containment. The pumps will be permanently set in this concrete containment. The tanks storing production water will also be on the concrete containment. All fluids captured in this concrete containment will be captured in a separate tank and disposed of at facility capable of handling the material MAR 30 2018tured.

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RECEIVED 3. List procedures to be used when designing and adding new equipment or operations. Office of Oil and Gas

All equipment will be reviewed for containment ability first. The concrete containment will be built for expansion, in case the equipment would require containment. All equipment will be reviewed by the engineering company involved in building our facility.

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4. Summarize all activities at your facility that are already regulated for groundwater protection.

Activities will include capturing of all fluids stored in water trucks, including but not limited to: Unloading of stored Brine Water in storage tank on truck, storage of hydraulic fluid, diesel fuel and Diesel Exhaust Fluid stored directly on the truck. Storage of engine oil for the downhole pump used for disposal.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property unless allowed by another rule.

No waste material will be used for de-icing or fill material on the property unless allowed by another state or federal rule.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

During the construction phase of the location, all employees will have daily communication regarding the integrity of silt fence, including proper installation. Post construction one on one employee training will include:

- Proper containment cleanup (since the facility will be concrete)
- Proper connect and disconnect of connections to unloading brine trucks.
- Proper communication of the spill hotline, in case of emergency.
- Discussion of proper pre and post trip inspections on trucks at the facility.
- Proper understanding of the loadout procedures at the facility.
- Daily inspection of the disposal well head, including pressures.
- Proper inspection and operation of the tanks and pump(s) at the facility.

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8. Include provisions for inspections of all GPP elements and equipment. Inspections must be made quarterly at a minimum.

- Daily Inspections - Pump, Tank and Equipment inspections for leak and working ability.

- Weekly Inspections - Containment integrity at unload site. Tank integrity. Wellhead integrity.

Signature:

Date: 2016

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Section 12 - Plugging and Abandonment



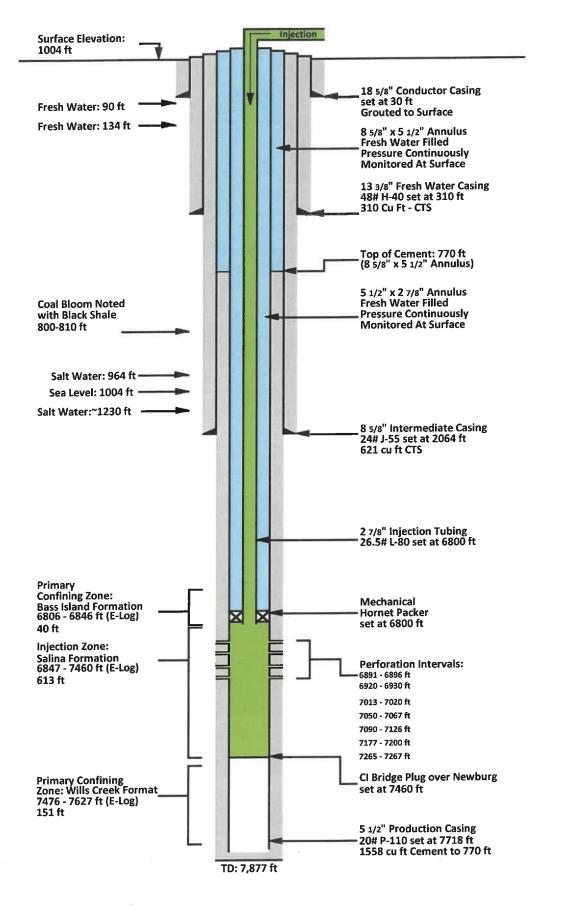
Jay-Bee Oil & Gas

Basic Plugging Proposal UIC Permit Application (2D08510284)-per section 12 Well Name: Pluto # 1A API Number: 47-085-10284-00-00

> Prepared by: Austin Clark Date: 5/20/2024



Pluto #1A API 47-085-10284 Jay Bee Oil & Gas, Inc. UIC 2D08510284001 (Well Drilled: July 18, 2020)



Well:	Pluto 1A
County:	Ritchie
District:	Clay
API:	47-085-10284
AFE:	NA
Location Coordinates:	39.261592, 81.081835 429 Simonton Road Ellenboro
Address:	26346

Date Drilled:	
Surface Elevation:	1202'
Surface Equipment:	Tubing, Valves, Tubing Head
Injection Formation:	Salina
-	6891'-7267', 7634'-7664', 7704'-
Perforations:	7717'
8.375" TD:	7877'
16" Conductor:	30'
11.75" Surface:	310'
5.5" Production:	7700'
2.875" Injection Tubing	6800'

**Note: A 6% Bentonite Gel Spacer is to be used in-between each cement plug. All cement is to be CLASS A mixed at 15.6#

Plugging Proposal: w/1.18 cf/sx or CLASS A w/2% CaCl

1 MIRU Workover rig. RU BOP's. Baker J-Style Packer @ 6800'. Release packer. Pull 2-7/8" Injection Tubing.

- 2 Set Retrievable 5.5" Plug.
- 3 ND Tubing head, and NU BOP's. Rig back up on well.
- 4 RIH and pull 5.5" Retrievable plug.
- 5 RIH with mill to millout 5.5' CIBP.
- 6 Proceed to Cement from bottom of well to top following all current WV O&G State P&A Requiments.
- 7 Rig down Service Rig and pull off of well.
- 8 Move off service rig and all surface equipment.
- 9 Begin reclamation process, seed and mulch. Check with WV if any additional work is needed.

¹⁰ Install monument per state guidelines, "monument or marker consisting of a length of pipe (minimum diameter size six inches (6")) filled with concrete (or the equivalent thereof if approved by the Chief) shall be erected over the well. The marker shall extend no less than thirty inches (30") above the surface and not less than ten feet (10') below the surface and into the well, and shall be sealed with concrete for the purpose of making the marker permanent. The API well identification number, as described above, shall be attached or stamped in a permanent manner to the monument, and the numbering shall be no less than one half inch (1/2") in height and detectable by any interested person approaching the marker".

Section 13 - Additional Bonding

CD-1 Page 2 of 2 (Rev 1/12)

API NO. 47-085-10239

(For single wall bond only)

ASSIGNMENT OF CERTIFICATE OF DEPOSIT

(Applicant) hereby assigns to the Jay-Bee Oil & Gas, Inc. West Virginia Department of Environment Protection, Office of Oil and Gas (the Department), Certificate of Deposit Number 8807045199 , fully assigned to the State of West Virginia, as collateral bond to satisfy requirements as provided 22-6-26 and 22-6A-15, West Virginia Code, 1931, as amended.

This assignment of Certificate of Deposit in the amount of Five Thousand Dollars and 00/100 _____, \$ 5,000.00 , is for the purpose of assuring that Applicant shall faithfully perform all of the requirements of aforesaid statute, regulations promulgated thereunder and terms of any permit issued for the operation of its oil and gas well(s).

This assignment shall be effective so long as Applicant shall own and operate said well(s) and until such time as applicant elects to provide alternative form of bond as provided by law or until released by the Department from its obligation after Applicant has satisfactorily met all conditions provided by statute, regulations and permit terms.

The Department is authorized to charge against the above Certificate of Deposit upon the failure of Applicant to faithfully perform all requirements as set out above. 11 n

Company: Jay-Bee Oli & Ges, Inc.	FEIN or SS No. 55-0738882
Executed by:	
*Title:VP	
Address: 1720 Rt. 22 E, Union, NJ 07083-6126	
Dated:	(Corporate Seal)
Subscribed and sworn to before <u>DEBORTH ARDA MORGAN</u> , as <u>V.P.</u> the <u>JAU-BEE OILE GAS INC</u> (Corporatio <u>FEBRUARY</u> , 2016.	the undersigned by (title) of n) this <u>344</u> day of
My Commission/expires on And K.M. Notary Public	sof.
(Notary Seal)	
Bank: United Bank, Inc.	
Title:	

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*If Corporation, should be signed by President or Vice-President. If executed by other official, must be accompanied by documentation of Board of Directors' authorizing such official to execute documents on behalf of the Corporation.)

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Section 14 - Financial Responsibility

APPENDIX I

Requirement for Financial Responsibility to Plug/Abandon an Injection Well

In accordance with WV Code 47CSR13.13.7.g, all UIC permits shall require the permittee to maintain financial responsibility and resources to close, plug, and abandon underground injection wells in a manner prescribed by the Chief. The permittee must show evidence of financial responsibility to the Chief by submission of a surety bond, or other adequate assurance, such as a financial statement or other material acceptable to the Chief. This certification must be signed by one of the following:

- 1. For a corporation: by a principle corporate officer of at least the level of vicepresident;
- 2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
- 3. For a municipality, State, Federal, or other public agency: by either a principle executive officer or ranking elected official;
- 4. Or a duly authorized representative in accordance with 47CSR13.13.11.b. (A person may be duly authorized by one of the primary entities (1-3) listed above by submitting a written authorization to the Chief of the WVDEP Office of Oil and Gas designating an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

Jay-Bee Oil & Gas, Inc.

(Company Name)

2D8510284

(UIC Permit Number)

I certify in accordance with 47CSR13.13.7.g., that the company/permit holder cited above will maintain financial responsibility and resources to close, plug, and abandon underground injection wells(s) in a manner prescribed by the Chief of the Office of Oil and Gas and that documents to support this requirement are on record with the same.

Jonathan Morgan

(Print Name)	
COO	
(Print Title)	Office of Öil and Gas
h	NOV 0 6 2023
(Signature) 11/2/23	WV Department of Environmental Protection
(Date)	

Section 15 - Site Security Plan

APPENDIX J

Site Security for Commercial Facilities

Provide a detailed description of the method(s) utilized at the facility to restrict or prohibit illegal dumping of unauthorized waste or vandalism at the facility.

- 1. Complete enclosure of all wells, holding tank/pits and manifold assemblies within a chain link or other suitable fencing; and
- 2. Require that all gates and other entry points be locked when the facility is unattended; or
- 3. Providing tamper-proof seals for the master valve on each well (a "lock-out" or chain & padlock system would be more secure; however, these devices could create a potential safety hazard if the well needed to be quickly shut in due to an emergency); and
- 4. Installing locking caps on all valves and connections on holding tanks, unloading racks, and headers.

Well heads and tanks/containments are properly fenced with multiple entry points and gates with company locks.

The facility itself has multiple entry points and locking doors.

Wellhead has lockout/tagout and valve open/closure procedures in place.

All tanks and manifolds have lockable valves and tanks can be isolated.

There is a camera security system installed at the outside of facility, internal views of facility, tanks, containment and offload areas.

Facility has lockout/tagout equipment and procedures in place for all internal and external equipment.

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Promoting a healthy environment.



Section 16 - Additional Information

APPENDIX K

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Identify permit or construction approvals received or applied for under the following programs:

Permit/approvals	ID Number	
Hazardous Waste Management Program under RCRA		
NPDES Program		
Prevention of Significant Deterioration (PSD)		
Nonattainment Program		
Dredge or Fill		
NPDES/NPDES – Stormwater		
WVDEP – Office of Waste Management (OWM) – Solid Waste Facility		
WVDEP – OWM – RCRA (Hazardous Waste TSD or Transporter)		
WVDEP – OWM – UST		
CERCLA – Superfund		
WV Voluntary Remediation – Brownfields		
FIFRA – Federal Insecticide, Fungicide and Rodenticide Act		
Well Head Protection Program (WHPP)		
Underground Injection Control (UIC)	2008510284001 - rene	wal app
Toxic Substances Control Act (TSCA)		
Best Management Plans		
Management of Used Oil		
Other Relevant Permits (Specify):	,	
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